

AMERICAN VETERINARY REVIEW.

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EDITORIAL.

EUROPEAN CHRONICLES.

PARIS, November 15, 1909.

NINTH INTERNATIONAL VETERINARY CONGRESS.—To add to the considerations published last month of the resolutions adopted at the Ninth International Veterinary Congress at The Hague during the general meetings, I to-day join a few important among those which were passed at the meetings of sections, thus completing my imperfect report of the event.

On the question of *Inspection of fish, game, poultry, crustaceous animals and molluscs, and of other animal foods, not included in the question 5 of the general meetings, in relation to the hygiene of man:*

The conclusions of Mr. Cesari were adopted:

1. On account of the accidents which can occur from the use of game, fowl, poultry, fishes, molluscs, crustaceous and other products of animal origin, it is necessary that an official control should vouch for their wholesome condition. It is possible to carry out the sanitary inspection of these products without changing seriously the commercial habits now existing. With the special knowledge that it requires, the control of these products cannot be realized in a scientific manner, except by veterinarians.

2. The laws and regulations relating to the inspection of meats must foresee the control of game, poultry, fishes, molluscs, crustaceous and other animal products and mention the various alterations which render them unfit for alimentary food, either in totality or in part, or which require a previous sterilization. Ani-

mal products imported from foreign lands ought to be submitted to inspection by the frontier veterinarian at the time of their introduction in the country.

It is necessary that abattoirs for rabbits and killing places for fowls, as well as the factories of canned game, poultry, fishes and crustaceous products should be submitted to regular inspection.

3. The introduction of animal products in cities shall be regulated in such a manner that these products shall be sent, as soon as they arrive, towards a center of veterinary inspection having a bacteriological laboratory. It is indispensable that in large cities several veterinarians be specially affected to this control. This first inspection shall be completed by visits of inspection in the markets and shops of dealers.

On the question of *Insurance of stock in relation to obligatory meat inspection*:

The conclusions of Prof. F. Hendrix and Prof. Doct. Edelman were joined together as follows:

1. To establish an insurance for cattle is necessary wherever inspection of meat exists, because it renders this considerably easier.

2. On that account and because of the influence that cattle insurance has upon the treatment of animals, it is necessary that veterinarians should recommend the formation of insurance cattle companies and support them.

3. If cattle insurance is not realized by the State, it should recommend it.

4. Cattle insurance companies ought to be placed under government control and in case of need be supported by it.

On the question of *Scrotherapy, seroprophylaxis and vaccination of foot-and-mouth disease and their value from the point of view of legal sanitary police*:

The following were accepted by all the reporters:

1. It is possible to prepare an active serum against aphthous fever.

2. Its use may be precious in the struggle against the disease, when it is associated with other sanitary measures.

3. The preparation of an active serum must be insured by state institutions, which shall give full guaranty against the spreading of the disease.

On the question of *The diagnosis of infectious diseases by means of the recently discovered reactions of immunity (except the subcutaneous injection of tuberculin and mallein).*

The motion of Prof. A. de Jong was adopted:

The Ninth International Veterinary Congress recognizes the importance of the new methods of experimental diagnosis of tuberculin and of mallein.

He expresses the wish that researches related to them should be continued to insure their utilization in practice.

On the question of *Infectious pleuro-pneumonia of horses:*

The following conclusions were unanimously voted:

1. Infectious pneumonia of horses is a specific disease, which ought to be separated from the general infectious, and especially from typhoid fever.

2. It is characterized by a fibrinous inflammation of the lungs and pleura with sometimes complications in other organs.

3. The etiology of the disease is not yet fully understood. The researches in that direction are very expensive and it is desirable that the state should grant funds to the experimenters working in that direction.

4. It is desirable that infectious pleuro-pneumonia of horses be treated by sanitary measures like other contagious diseases.

On the question of *Recent investigations (of the two last years) concerning chronic deforming arthritis of horses:*

The conclusions were: That the prophylaxy was to be obtained:

(a) By keeping from breeding all animals constitutionally predisposed.

(b) By keeping in a methodic and systematic manner a sanitary record, detailed and individual, of the reproducers and of their family.

(c) In having in the high administration of breeding establishments (haras) only specialized veterinary zootechnicians.

On the question of *Teaching of zootechny*:

Doctor Lydtin had his motion adopted: It is necessary that a wide and thorough teaching of zootechny be given in all veterinary schools, and that it should be the object of severe examination.

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AUTOSEROTHERAPY.—In my chronicle of last September I made allusion to the trial made by a Mr. Magnin of the treatment of serofibrinous pleurisy in resorting to the new method much used in human medicine by German and French practitioners: "the Autoserotherapy."

A more recent communication that I find from a physician of St. Petersburg, Mr. Marcou, confirms all the good effects already obtained and recorded in medical papers. He has applied the method to eighty-two individuals. Every one has recovered and for him autoserotherapy can be applied upon all carriers of a serous or even hemorrhagic effusion. Pus only is contra-indicated. In most cases the resorption that follows takes place rapidly. Exudation of tuberculous patients do not yield to this treatment. One single puncture has only been necessary.

It certainly would be very interesting for our veterinary practitioners to give this mode of treatment a trial. The *modus operandi* used in human medicine is very simple and absolutely harmless and painless. A syringe of 2 cubic centimeters is all that is required. The skin is disinfected, the needle introduced into the chest and 2 c.c. of liquid is drawn. Without drawing out the needle entirely, it is pulled away from the thoracic cavity and then re-entered under the skin where the syringe is emptied in the cellular tissue. The instrument is then withdrawn and the

point of entrance protected with sterilized gauze. Generally only one puncture is necessary. A second may be resorted to, if the exudation does not seem to go down.

But while I am reading the good effects of this (Gilbert's method, as it is called), I am also coming across the résumé of another communication which a Dr. Bourget has made at the Sixteenth International Congress of Medicine at Budapest, and which treats of the *clinical results of serotherapy* in general.

It is a general onslaught against the inefficacy of all the sera used, with a therapeutic object, in human medicine, against typhoid fever, pneumonia, tuberculosis, erysipelas, scarlatina, tetanus, cerebro-spinal meningitis and even diphtheria. Dr. Bourget writes:

* * *

"Pressed by reasons of scientific vanity and also often by mercantilism, one can state without sufficient proofs that guinea-pigs or rabbits can be cured of this or that infectious disease and that men can also with a certain serum.

"Experiments on animals cannot be contested, but clinical observations show that they are not verified with man.

"To the pharmacological point of view, it seems that there exists in these serotherapeutic attempts, the same spirit of belief and dupery that existed among the old physicians of middle age who were looking in plants for substances able to relieve the sufferings of men.

"Seekers of specifics are legion; and unfortunately most are entirely ignorant of scientific methods. They imagine that it is sufficient to advance a theory and look into the Greek or Latin language for a big name to designate and qualify the dreamed-of substance and then their dream becomes a reality. Modern therapeutics counts thousands of substances which can cure all diseases and whose type is represented by the famous toxins, and anti-toxines, anticorps, etc., but which are substances that no one knows the physical and chemical nature of, which no one has iso-

lated, but which nevertheless represent individualities having defined therapeutic properties.

"A great wrong is thus done to science by those who without sufficient proofs, introduce in medical practice, medication of microbial origin, having certainly an action on animals of experiments, but being without any therapeutic effect in man."

There may be some truth in the complaint made by Dr. Bourget, but to deny that all sera which have an undoubted curative action in animals, are without any efficacy in man, seems to be an assertion that no one will accept.

At any rate it would be a gross error to believe that all the sera used in veterinary medicine have no equal curative or even preventive value. And besides, we cannot expect to be privileged and have no charlatans or humbugs among us.

* * *

NEW PATHOGENY OF HEAVES.—It is known that in the theory advanced by Freund, the dystrophical alterations of the costal cartilages with their "early senility and their following rigidity," accompanied by their hardness and the ankylosis of the sternochondral joints, were to be considered as one of the frequent pathogenic conditions of pulmonary emphysema; or better, for the respiratory disorders classified under that name. And it is with this starting point that the operation was proposed of the uni or bilateral section of the first cartilage, in varying number, so as to permit the thoracic cage to resume its perfect mobility. This theory has been extensively discussed in scientific centers and societies of human medicine.

Taking as the corresponding disease to human emphysema, that common affection of solipeds, Heaves, a veterinarian, Mr. Leduc, has studied the application of Freund's theory to it, and in a communication that he made before the Société de Pathologie Comparée he has related the results of his observations and disproved the generally admitted classical theory of the respiratory troubles, and of the double expiration of heavy horses as being

due to the distension and loss of elasticity of the emphysematous pulmonary parenchyma, by stating that he had observed that not only in many horses, that had the symptoms of heaves, most marked when alive, at the post-mortem examination of their lungs, there were but few small emphysematous spots and a pulmonary structure, but slightly altered; and also that he had seen both lungs very emphysematous and yet the horses had never shown signs of heaves. Another theory then had to be found to give a more satisfactory explanation than the classical one and for Mr. Leduc the rigidity of the walls of the thorax, consecutive to the lesions of the costal cartilages and of the chondro-sternal articulations are very often the cause; it would explain the sudden jerky expiration, as manifestation of the suppression of all thoracic elasticity.

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Any how, says Mr. Leduc, these chondral and chondro-sternal alterations are easily detected if one looks for them; and he mentions several cases that he has observed in animals that were destroyed as useless because of being badly suffering with heaves. The cartilages are particularly hard, the saw must be used to divide them, they are more or less red, and when they are cut they have on the section a porous ossified aspect. The ossification is more marked on the level of the chondro-costal joint, which is rather solid and is broken up with difficulty; the chondro-sternal articular surfaces are patched with yellowish spots, rough and irregular; their reciprocal mobility has disappeared.

One can understand that being thus altered, the thoracic cage is not in condition for the respiratory dilatation. Mr. Leduc has taken many comparative measurements. Of course, the differences cannot be very extensive, if one bears in mind the fact of the manner in which the sternum is secured by the ribs. However, in sound animals, the dilatation of the thoracic perimeter, in the state of rest, may be represented by 1.3 per cent., and after exercise it remains pretty near the same. In heavy horses, at rest, the dilatation of the perimeter is of 1.004 per cent., and after

work 1.39 per cent, which for the author shows what effort of contraction the heavy horse must make to maintain in vital equilibrium his respiratory movements, when he is at work, and that by the want of elasticity of the thoracic walls due to the pathologic rigidity of the cartilages. It is evident that to this point only, Mr. Leduc endorses the theory of Freund, and that he does not follow him when he patronizes the section of the anchylosed cartilages to render them their mobility, as it is suggested for human patients.

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THE PROGRESSES OF EXOTIC PATHOLOGY.—At a conference made a short time ago, Prof. Laveran presented the subject clearly before a large audience of scientific gentlemen, which I will attempt to resume concisely.

Since thirty years, immense progresses have been realized in the knowledge of exotic diseases of man and animals. The rapidity of these advances is explained first by the new methods which have been discovered in the researches and by the study of the pathogenous agents, and again by the greater relations that Europe entertains with the other parts of the world and which have developed in proportions unknown until then. In 1880 the clinical study of most of the exotic diseases had been made, but the etiology remained obscure. All that would be spoken of was of miasma, of unknown nature which gave rise to paludal fevers, cholera, yellow fever, dysentery, pest, and the mystery that surrounded the apparition of these diseases outside their ordinary centers of development, had for effect to increase the fear that they inspired. From 1880 the discoveries relating to the agents of exotic diseases and their mode of propagation have succeeded each other with a rapidity altogether remarkable. The discovery of the hematozoa of paludism by A. Laveran in 1880 has not had only for effect to make known the agent of the most prevailing enemy of warm countries, it opened to investigators a new field, in showing them the importance of the micro-protozoæ in pathology.

And then began the series: Discovery of the choleric vibrio of Koch in 1883, with the effects of drinking water in the propagation of choleric epidemics. Discovery of *Amæbæ* in dysentery and abscesses of the liver in warm climates by Kantulis, Wm. Osler, Councilman and Lafleur. Discovery of the micrococcus of Malta or Mediterranean fever and its ordinary mode of propagation through the milk of goats, by D. Bruce in 1887. Discovery of the *Piroplasma Bigeminum*, agent of one of the most prevailing and serious bovine epizootics, Texas fever, by Smith and Kilborne in 1893, and also of the transmission by ticks. This discovery is soon followed by that of other piroplasmosis in sheep, in dogs and in horses. In 1894 discovery of the pest bacillus and of the part played by rats and fleas in propagating the disease. Discovery relating to the action of *Anopheles* in the propagation of paludism by Ross in 1897-1898 and of the *Stegomyia fasciata* in the propagation of yellow fever by Read, Carroll, Agramonte, Guiteras. Discovery of the mode of propagation of filariasis by mosquitoes by T. Mansion and Bancroft. The discoveries relating to animal trypanosomiasis such as Surra, Nagana, Mal de Caderas, etc. That of the agent of the sleeping sickness and of its propagation by the tsé-tsé fly. Discovery of the agents of the Kala-Azar by Leishman and Donovan and of the furuncle of Orient by Wright.

Those are among the principal discoveries only. Thanks to all of them we no longer are reduced to consider mysterious miasmas as causes of exotic diseases. We know the agents of paludism, cholera, pest, piroplasmosis, trypanosomiasis, leishmaniasis and we know that contrary to the old accepted ideas, the transmission of those agents does not take place through the air that we breathe. The importance of the active part of insects and of blood suckers acarians unsuspected thirty years ago, is to-day well demonstrated.

These positive data upon the etiology of exotic diseases have permitted us to give up the rules of old prophylaxy, purely empirical and often illusory, to replace them by rational and efficacious prophylactic measures. Disease like pest, cholera, yellow fe-

ver, and others which gave rise to extensive epidemic manifestations the world over, are diseases which can be avoided.

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A WARNING TO CANINE SPECIALISTS.—A three-year-old dog, weighing about 20 kilogs., had to be submitted to a surgical operation and to obtain local anesthesia received in the thickness of the skin $1\frac{1}{2}$ c. c. exactly, of a 4 per cent. solution of cocaine; say the dose of 0.06 gr. of pure cocaine. This solution had already been used in smaller animals without any bad effect.

When the operation was concluded, the patient presented all the symptoms of a severe cocaine intoxication. Relieved from all restraint and left free, he sits on his haunches, the eyes fixed, pupils largely dilated; he has a frightened look and seems to have hallucinations. Sight and hearing appear abolished. The dog is indifferent to what goes on around him. He walks staggering, stumbling and when he stops, resumes the same sitting position. Soon there appear convulsive motions, the head and the jaws first, and soon the trunk and legs are taken in succession. The head is agitated with incessant motions. The dog shakes it up and down and then to the right and to the left. The lower jaw is hanging or again contracts suddenly. Foaming whitish saliva flows from the mouth, the deglutition is impossible and the face has a peculiar grinning appearance. The whole of the manifestations look like an epileptic attack; but yet the animal does not drop on the floor. The sensibility of the skin is remarkably reduced. These manifestations lasted for half an hour. They gradually diminished and have completely disappeared after two hours.

This record published by the unfortunate Prof. Suffran, of the School of Toulouse, who died recently, is not a new fact, as since a long time it is known that cocaine injected in intradermic method for surgical purposes may give rise to severe phenomena of intoxication. In the first years of the use of cocaine these accidents were quite frequent. The local effects were imperfectly

known, as also were its general properties. Fatal intoxication has indeed been observed in human and veterinary medicine. To-day we know more of cocaine and the toxic doses have been carefully established, but there is one point that this case illustrates; and that is that there may exist some special susceptibility among individuals of some species and possibly in small animals, in which an injection of small dose may give rise to toxic manifestations in some individuals, while the same quantity would prove innocuous to others of larger size.

To resume: This dog of 20 kilogs. has not been able to support the dose of 0 gr. .06 centig. of cocaine when according to classical data the toxic doses can be estimated at 0 gr. .01 centig. per kilogramme of the weight of the animal.

Operators will then do well to take their precautions when resorting to local injections of cocaine. To avoid intoxication in dogs, said Suffran, it is best to use specially weak solutions, at 1 or 2 per cent. for instance, and inject only small doses. It is indeed better to renew the injection if necessary than to be exposed to accidents which may be very serious and which anyhow will always be very disagreeable.

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A GLANCE IN COMPARATIVE PATHOLOGY.—The amount of valuable information that comparative pathology can derive from the post mortem examinations of animals that die in zoological gardens and menageries cannot be ignored. In these pages it has been our pleasure to record many times the discoveries that we personally have made and also oftener those that our friends of the zoological gardens of Philadelphia, New York and other cities have kindly sent us. But to illustrate in a wider scale the importance of the researches that veterinarians ought to make and to show a few examples of the discoveries that one may make, I may be allowed to mention the relations which under the heading of "Practical Facts," Mr. Lucet, adjunct to the Chair of Path-

ology at the Museum of Natural History has recorded lately from post mortems made at the Museum.

It is first a case of tuberculosis found in a lama, in which the lesions instead of assuming the ordinary nodular form, had the aspect of caseous pneumonia. Both lungs were diseased and formed a mass which at first glance might have been taken for carcinoma. There were only very small and few tubercles in the liver. Mr. Lucet, of course, has observed the same disease among monkeys and chimpanzees. This is a very common disease among these animals in zoological gardens and in menageries.

Tuberculosis has also been found in turkeys. The lesions were located principally in the intestines and the liver. However it seems as if this animal is seldom affected with tuberculosis. A California otary has presented a generalized carcinoma of the abdominal cavity. The lesions were particularly handsome and assumed a typical tuberculiform aspect, consisting in numerous nodosities or tubercles, arranged in flat surfaces or pedunculated in the intestines, kidneys, spleen, liver, diaphragm, mesentery and omentum.

The examination of the blood of various birds, geese and marabouts, revealed numerous endoglobular parasites, principally of the *Hemamaba Relicta* type.

In the autopsy of a marabout, it was found that death was due to a foreign body which had perforated the gizzard.

Various species of coccidies were found in a mufloon, in red partridges, in a Siamese cat; in a jaguar one botriocephalus was found, in a vulture several encysted intestinal parasites, whose nature is not yet established. The lesions of typhlo-hepatitis were found in partridges and in young turkeys.

By this enumeration one can judge of the vast field for studies which is yet open and it would form very valuable contribution to comparative pathology if all such similar observations were recorded.

This is a call to every pathologist who may occupy positions where opportunities would be offered to them.

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TUBERCULOSIS IN CATS.—Although the subject of contagion of tuberculosis has received much attention for its transmission by ingestion of bovine tuberculous products, in many of our domestic animals it seems quite strange that the question has been comparatively but little agitated as far as domestic felines go. Indeed, the first experiments that were made were by Gunther and Harms, but the records are too concisely made to be valuable. Later, Viseur experimented upon eleven animals, ten of which took the disease. Toussaint says that he has obtained similar results. Nocard mentioned also one case of infection. According to these, it seems that cats are animals very susceptible to the ingestion of bovine virus. It must be remembered that in natural conditions they are rarely found tuberculous, although they are much exposed to contract the disease either by their living with people, or again because of their being fed with meat of bovines, etc. While following series of experiments, a veterinary inspector, Mr. P. Chaussé, made a number of inquiries to test this question, and related the results at the Société de Biologie. One cat was fed with only 1 gramme of crushed caseous matter, very rich in bacilli. Killed after 104 days he exhibited caseous lesions of the mesenteric and para-cæcal lymphatic glands only. Two other cats were infected with 200 grammes of tuberculous products. After 72 days one had tuberculosis of the lungs and of the cervical and mesenteric glands. The other had lesions only in the mesenteric and pulmonary glands. A fourth cat gave similar results with only 2 grammes of infecting food.

After these positive results Mr. Chaussé related also negative cases. Eleven cats of various ages received various quantities of infected food and after periods of time varying between 76 and 125 days, were killed. All of them had remained free from tuberculosis and presented no lesions.

The conclusions of these experiments are: 1. The susceptibility of cats to the infection by bovine virus through ingestion is real, although it often fails even with large doses. 2. It is probable that an already existing lesion of the mucous membrane of the intestine, or a solution of traumatic nature is necessary to

promote the entrance of the virus. The permeability of the mucous membrane depends on its condition.

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BIBLIOGRAPHIC NOTICES.—*The Revue Generale de Médecine Vétérinaire* has made the two numbers of her October issue one large edition of over 200 pages. It contains a complete résumé of the work of the Ninth International Veterinary Congress of The Hague: the preparations, the opening, reception, the reports of the general and special meetings with the closing. The whole is illustrated with three plates, one a general view of the members, one of the permanent commission and of the organizing committee, and one of the military veterinarians that were present.

It also gives the last motion passed at the official seating relating to a weekly publication of a uniform bulletin on contagious diseases, viz.: glanders, dourine, rinderpest, contagious pleuropneumonia, foot and mouth disease, anthrax fever, symptomatic anthrax, hemorrhagic septicemia of cattle, mange of sheep, variola, rouget, septicemia of pigs, swine pest, rabies, chicken cholera, avian pest.

In this publication the worthy editor of the *Revue Générale* has certainly outdone any veterinary publication of modern times. It is a big record.

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In the fourteenth semi-annual report of the Chief of the Cattle Bureau of Massachusetts which I have just received, I pick out some interesting figures relating to the prevailing of some of the contagious diseases of domestic animals in that state. For instance, in the year ending Nov. 30, 1908, rabies is credited with a grand total of 1,484 animals killed, dead, released or still held in quarantine. Of glanders for the same date, 941 horses or mules died or were killed. The figures recording the reports of inspec-

tion of animals, stables, etc., show that the position of inspector is not a sinecure. The number of herds inspected amounts to 33,011, of neat cattle inspected 234,347, of cows 177,047, of sheep 26,384 etc.

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The following were also received: Bureau of A. I., Bulletin 116; tests concerning tubercle bacilli in the circulating blood, by Dr. E. C. Schroeder and W. E. Cotton; recent work concerning the cause and prevention of Hog Cholera, by Dr. M. Dorset; the Chicago Veterinary College Bulletin and Announcement for June, 1909.

A. L.

WELCOME TO THE GOLDEN WEST.

Last month we announced the result of the deliberations of the executive committee of the A. V. M. A., which fixed the place and date of the next meeting of that organization as San Francisco, Sept. 6-7-8-9, 1910, when we pointed out some of the delights and advantages of a visit to that wonderful semi-tropic.

This month it is our pleasure as well as our privilege to publish one of the most whole-souled welcomes from the veterinarians of the "far west" that it is possible to conceive; in short it is a real western welcome. Before what would seem scarcely enough time had elapsed for them to receive word that their invitation had been accepted by the national organization, we find them organized and making preparations to receive that body, with a heartiness that is positively inspiring.

The state organization of California has lined up its army of workers, with Dr. R. A. Archibald, of Oakland, as chairman of the Entertainment Committee, which accounts for the splendid start that has been made thus early in the building of a great meeting of the A. V. M. A. in 1910. Distance means nothing to Dr. Archibald. He can consistently bid the members of his profession to attend the meeting on the Pacific Slope, no matter *where*

they reside; as he, living in beautiful California, ("God's country," as Californians call it), attends the meetings of the A. V. M. A. regularly, whether it elects to convene east or west of the Rockies, in the Middle West, on the Atlantic seaboard. Therefore it behooves the veterinary profession of America to read his welcome in behalf of the profession of California and the far West, and his appeal for their support, as voiced in his communication to them under the head of "Correspondence" on page 495 of this issue of the REVIEW, with the same earnestness in which it is tendered them. The veterinarians of the Pacific Slope desire with all the earnestness that is in them to make the 1910 meeting the greatest that has yet been realized; and they have united their forces to work unceasingly to that end from now until the eve of convention; and they will win out. They modestly promise one hundred and fifty to two hundred new members as part of the fruits of a visit to the "Golden West"; that alone would warrant the convention of the association in their balmy clime; for it is good "timber" that develops under those sunny skies. Let every member of the A. V. M. A. begin at once to assist that earnest, zealous committee in some manner to make the goal toward which they strive. They are a long way off from some, but not a bit too far from any to be benefited by the support that every member of the A. V. M. A. owes them.

Begin now to plan to attend the meeting in person, if at all possible. If it is *not* possible for any good and sufficient reason, do the next best thing, encourage everyone in the profession that you know to go. And do not forget the REVIEW's appeal of a month or two ago for each member of the A. V. M. A. to secure at least *one* new member from among his circle of acquaintances. It is not absolutely *necessary* that they go to the convention to be elected to membership, so do not let that furnish an excuse for not filling out an application until such time as they can see their way clear to attending. Write Secretary Lyman for some of the new application blanks and let us see how many names of new applicants we can publish in the March issue of the REVIEW.

HOLIDAY EDITION OF THE BREEDER'S GAZETTE.—We are in receipt of the "Holiday Edition" of that most excellent periodical, the *Breeder's Gazette*, and, while we have had the pleasure of perusing many previous holiday numbers, the 1909 edition surely surpasses in literary offerings and artistic beauty all previous productions.

Among the leading articles may be found "The Art of Animal Photography," by Gilbert H. Parsons, containing reproductions of nine of his animal photos of horses, cattle and sheep, and "The Advanced Position of the Farmer," by Hon. Geo. E. Roberts, ex-Director United States Mint.

In addition to the scores of fine reproductions of photographs of all breeds of horses, cattle, sheep and swine, there is a full-page colored plate of the late Amos Cruickshank, "The Herdsman of Aberdeenshire," described by his friend and neighbor, Wm. Duthie (in an interesting article in the same number) as "A Prince of Breeders."

The veterinarian's life-work, his daily endeavor, is directed in the interest of the tiller of the soil, no matter what the object of production; but he is particularly interested in the breeding industry. We, therefore, wish it were possible for every veterinarian who is not a regular subscriber, to procure a copy of the holiday edition for themselves and their families. The reading is instructive, clean and wholesome, and the REVIEW congratulates the *Gazette* editors on their achievement.

MISS JESSIE WILLIAMS AND A. M. MAIR UNITED IN MARRIAGE BY REV. R. B. DOAN.—Miss Jessie Williams, daughter of Dr. and Mrs. E. E. Williams, was married November 30, 1909, to Dr. A. M. Mair, at the bride's home, 305 East Bridge street, Streator, Ill., Rev. R. B. Doan officiating. Only near relatives were present. After a sumptuous repast, Dr. and Mrs. Mair left for Chicago for a few days. For the present they will reside at the home of the bride.

Dr. Mair is a veterinary surgeon, lately located in Streator.

ORIGINAL ARTICLES.

VETERINARY INSPECTION OF DAIRIES THAT ARE PRODUCING MARKET MILK.*

BY CLAUDE D. MORRIS, V.S., BINGHAMTON, N. Y.

Market milk is milk that is produced for sale; as the fresh fluid leaves the farm in the morning it may be going to a butter or cheese factory to be transformed into those articles of food or to a bottling establishment that puts the raw fluid on the market in that form or to the common receiving station that ships milk in bulk from the country to the city. Or it may go to the condensery and there worked into the finished product, having been made up according to the commercial brands of condensed milk as found on the market, or a very small portion of the raw product may reach the confection and ice cream establishments or the recent powdered milk industry.

No matter where it goes, under whatever name, it is on the market and there for sale, a commodity of commerce. Now the market is more than half of every phase of the question under discussion. The person or establishment dealing in milk or milk products has it in its power to not only improve the standard of production by consistent oversight of such methods that need direction in the spirit and purpose of co-operation for the general betterment of the business at the country ends, but also the market can produce a demand, in other words increase the consumption of their products by enlightening the public as to the nature and economy of the use of milk and its products as a part of its daily dietry.

To illustrate, it is not generally recognized that one quart of

* Presented at the twentieth annual meeting, New York State Medical Society, Ithaca, August, 1909.

milk testing 13 per cent., solids, has a coloric value equal to 12 ounces of lean beef or 10 eggs. The market that disregards the importance of proper production or the value of dairy products as compared with other foods is simply drifting. In other words, the market sets the pace, creates the trade and maintains the business. Speaking in a general way, there are two kinds of markets, one which exercises an inspection supervision over production, that is, it sets the standards for the essentials that should be observed in order to make a wholesome safe milk and adopts methods and regulations consistent with the needs of such work, keeping in close touch with the system. Such a market is careful to handle a fluid in clean vessels surrounded with cleaner conditions and transported from the country to the city market in refrigerator cars and as soon as it reaches the city, to be properly served to the consumer.

Such a market is a constructive industry and in a large sense is a public utility serving a public need. The other market has no regard for the source of its supply, it simply receives milk as milk, apparently indifferent whether it comes from healthy cows or suitable surroundings, warm or cold, clean or dirty. The stock inducement that is offered to dairymen as a reason for their business, consists in one short sentence, a sort of verbal contract, namely: "Let us buy your milk. We will not bother you with inspection. We don't care anything about what your cows eat or drink. We will not consider it our business to know whether you clean your stables daily or weekly; whether they are whitewashed or otherwise; no matter about windows and ventilation in your stables; use your own judgment about that, as such matters are only a theory, and if any of your family are sick with typhoid or diphtheria, simply say nothing about it, to say that such diseases are conveyed through milk to the consumer, is also a theory, standing only on a presumption; no need for a milk house, no ice or special care, simply bring along your milk and we will pay within 10 or 20 cents per hundred pounds of Borden's prices."

This is the incentive offered by a majority of the country markets to dairymen; the object is to *do business* and take the

chance. This is the predominant factor to be met with in the dairy districts throughout the state, with here and there an exception. It is the one factor that hinders progress, scoffs at standards, as having any value and is a menace to public health. And withal it puts a premium on shiftless methods and encourages the production of unsanitary, unsafe milk. It has no ideal to advance and but little concern for the well-being of the industry. While this statement may seem to many as extreme and overdrawn, in the main it is the principle that underlies the competitive market in every district where the effort is put forth to produce only sanitary milk, excepting such districts in which the sanitary market has the whole field, which are few.

As to dairymen, speaking in a general way, as I see it, there are four grades of producers of milk and for convenience I will classify them in the following order, including their numerical relation to production. The ideal, the choice, the indifferent, the careless.

The Ideal	{ By certificate.....	1/10	"
	{ By natural inclination.....	1 9/10	per cent.
The Choice.....		18	"
The Indifferent		75	"
The Careless.....		5	"
		<hr/>	
		100	"

According to this classification, as you will note, the Ideal is sub-divided into two classes; the ideal by nature is a class of dairymen that are always thoroughly clean and progressive. The other of this class are ideal by certificate. A class of dairymen that are clean because it is commercial policy. And their methods are supposed to be presided over by a milk committee appointed by some medical society.

The second class which I name as Choice are a class of dairymen that endeavor daily to do the right thing, always open for conservative suggestion and ready to act on sound advice.

The third class, the Indifferent, are a class of dairymen that predominate numerically; they farm it in an easy-going manner, quite inclined to do the right thing one day and then omitting to do it the next day, not strenuous but live in hopes to reach the goal, cheerful and willing but needing proper correction, and some of them close inspection.

They make a good living and are not anxious to get rich.

The fourth class that I have termed "Careless" are a class that are ignorant, composed of a willing and a wilful mind. By careful and persistent effort the inspector can turn half of them into quite good dairymen; the other half will keep him anxious and possibly some of them should not be allowed to put their products on the market. This class, however, do not exist in every district in the proportion I have indicated by the figures, as in some districts of three or four hundred dairymen, none could be rightly classed as "Careless," while in other districts a large number would be such.

This classification shows that 80 per cent. of dairymen producing market milk require some measure of inspection and that 20 per cent. should be inspected occasionally, merely as a form, as there are people making market milk that inspection does not apply to because their methods and products are all that could be desired.

The field for inspection work is in the last two classes and includes 80 per cent. of all milk producers, and implies that dairymen producing milk for the butter or cheese market require the same measure of inspection as is required of the raw milk market. Many dairymen welcome inspection, taking a deep pride in wanting their surroundings to appear commendable in anticipation of a good score, and this has come about as the result of either a previous efficient inspection or as the result of his own management and judgment in which he feels satisfied that his dairy outfit will undergo a satisfactory inspection.

There are some who appear indifferent, giving the impression that "There it is, what have you to say? It suits me, etc." Yet these dairymen continue to get in line and get away from that

feeling if appealed to in the right manner, along common sense lines.

While there are a few that rather ignore inspection and treat it as an unwarranted intrusion. But even a large part of that class will comply with standard regulations, realizing that in order to sell their product on a safe market, a measure of compliance is necessary.

I believe in the principle and value of dairy inspection, not because I am in the work, but by being in the work I see the importance of it as a means of improving farm lands, making for better crops for cattle, the uninterrupted maintenance of healthy stock, uniform and sanitary methods in the production and care of the milk, and withal, putting on the market a safe, economical food for man.

I feel assured of my ground, that intelligent inspection is helpful and profitable to dairymen as well as rendering a public service.

Let me say to all who intend or desire to engage in inspection work of this nature, that such will succeed fairly well at least, if they will start out by knowing nothing until they have learned enough by experience to know something and then apply it by degrees.

The thing that has brought about a measure of reproach and unfavorable criticism throughout the dairy districts of the state regarding inspection, is due largely to the manner in which some inexperienced laymen have applied their methods. To tell a dairyman at the outset, or give the impression that his methods and conditions are intolerable, as viewed from the inspector's conception of things, offends rather than enlightens the dairyman and in his moment of disappointment, mingled with regret and disgust, his own idea leads him to regard the whole thing as an offensive officialism outside of its jurisdiction.

The inspector should not lose sight of the fact that the dairyman owns the place; that it is his ground and the inspector's personal presence accompanied with his suggestion or command is entirely at the courtesy of the owner.

Successful inspection requires a study of human nature in an attempt to point out to the dairyman the value to him, of pursuing certain methods in order that he put his business on a basis ultimately more profitable.

The subject of dairy inspection covers such a wide range and so many details, it would be presumption to ask your patience to go with me over the ground, but with your permission I will give a brief didactic of taking a dairyman that is producing milk under conditions that are claimed as unsafe and building it up to a sanitary safe standard.

The dairyman in the case has been making milk for a number of years and taking it to a near-by butter or cheese factory. His stable is a shed without windows; the ceiling is an open board floor or it may be constructed with poles upon which the hay or straw is stored or the stable may be an underground apartment: that is, a cellar under the main barn poorly lighted, if at all, with no ventilation and possibly nothing but a ground floor. During the months the cattle are housed, it is his custom to pile the manure up against the stable by throwing it out of small slide doors which also act as windows, about four feet above the stable floor, or possibly storing it in the stable for several days before removing it; milking the cows and keeping the fresh milk in the stable over night, and on the following morning add the morning's milk to the previous night's mess without cooling either or giving it any special protection. And from that condition it goes to the factory.

The dairyman at this juncture is approached by the veterinarian or Branch Inspector of the sanitary milk market first, to see what he has got in the way of a dairy and what are the possibilities of changing the surroundings sufficient to fit the needs of the market, engaging in a few moments of general conversation in order to get at the feeling of the man, the question unconsciously comes to the surface, avoiding all along any criticism of his method but explaining in a simple manner, the economy and value of modern dairy methods and the advantage and influence of being rated a "first class dairyman." And if he decides to

adopt the inspection market, the inspector will begin one step at a time to build up his conditions by taking hold of what seems to be the worst feature first and by degrees correct it and continue to do so by taking the next bad feature and step by step encourage and lead him along until the former poor conditions have been transformed one at a time, into good conditions. The dairyman becomes interested and takes pleasure in working out the problem of laying aside worn out ideas and adjusting his conditions to new and growing thoughts of up-to-date dairying. His cattle look better and are more productive. Their health has been watched over by the veterinarian. Those troubles that "occasionally" intrude upon the farm, such as abortion, indigestion in its many forms, mammitis, foot-ail, etc., and especially the much discussed disease tuberculosis, all receive his personal attention and advice and any animal that is considered as harmful to other members of the herd or to the product of the herd is removed as a safeguard. And many times advice and treatment is given when desired for other domestic animals of the farm. It becomes the pleasant duty of the veterinarian to give every assistance to the dairyman and thereby cultivate the spirit of co-operation, the art of helping each other.

A neighbor drops in and one of the recent visits of the veterinarian is discussed in detail and if he has left a suggestion for this or that change or improvement, as a foot note on the score of the dairy, it is analyzed and if it contains a weak point it is held up as an object for jest in a good-natured way with a measure of regard notwithstanding.

Neighbors compare their individual score with each other and the spirit of rivalry in an effort to excel, begins to grow in the neighborhood. The trend of affairs is growth and betterment all along the line.

The former things have passed away. The dingy, dirty stable is only a memory. The previous shiftless methods of caring for the milk brings back a little reflection, and there is a desire to forget the once nasty appearance of the cattle during the winter months of their housement. The picture of to-day is most pleas-

ant to view because it adds lustre to the efforts of the immediate past. It is evolution. The new has come up out of the old. The value of inspection depends upon the ability of the person making it. To take a bad condition and turn it into a good one without irritation to the dairyman and to help him adjust the transformation economically by giving sound advice, and, if need be, the lend of a helping hand now and then. It will make for encouragement and prove the sincerity of our work.

The veterinary inspector has two things to overcome; first, an opinion among many dairymen that inspection of any sort is largely a theoretical hypothesis, and the other, that quite-human feeling in the mind of the farmer, is that the inspector is more or less ignorant of the fundamentals of agricultural life and dairying in particular. Such dairymen take the position of the Missourian; they are willing to be convinced, but you must show them and explain on the basis as they understand, things, as they obtain in daily life. And if the inspector makes good at this point, he will receive co-operation from the dairyman and time will prove that his efforts will avail.

It is my own practice to suggest to dairymen such methods, the adoption of which will, in the main, contribute towards the production of wholesome milk. I deal with the question as a mass and not from the individual standpoint. The principle is to get the leaven to work. It will permeate the mass, bringing about the uniform result.

There are seven principal features to be observed in order to make good milk:

1. A healthy herd of cows.
2. A suitable, clean stable.
3. A safe water supply.
4. Clean utensils and clean milking.
5. Proper storing and chilling of the milk.
6. Suitable transportation to the factory or market.
7. That all persons who are connected with handling the milk in any manner shall be free of any communicable disease.

The many details associated with these features, in order to get desirable results, are in proportion to the needs of the individual dairy and in the case of the Borden Company these details are applied by the branch inspector under the supervision of the veterinarian after each have visited the dairy together and taking careful note of the conditions and making a score.

The general principle of sanitary dairying is not difficult to apply. The range of detail depends on this or that dairyman. If one is low in the scale of sanitary production, the more of detail is necessary in order to raise his standard, while, on the other hand, if a dairyman is working with methods which score well the necessary detail has passed into daily practice and becomes methodic. The aim is to produce milk by a schedule, as it were. That is, the adoption of an efficient economical method daily applied.

While there are many things that the veterinary inspector should do, there are, however, some things that are both professional and orthodox that he should not attempt to carry out. That is, to acquire the ideal, of all conditions, among a common mass of dairymen. The ideal in this work exists in two phases: first, the social or fastidious sense of things: dairying by literature, magazine articles, etc.; the writers mean well, but their zeal outruns their practical knowledge, and all fail to inform the dairyman how to apply the scheme, and also fail to reckon the cost, which leaves room for them to denounce it as theory only.

The other phase is the medical aspect of the question. The laboratory has done much in recent years to illumine the practice of medicine as well as to increase the number of its unsolved problems. Research work of this nature is yet in its infancy, and in the wake of its progress some investigators seem to aim at scaring the community into accepting their findings.

One laboratory worker tells us that baneful bacteria abound in street, air, water, foods, home and clothing. Another tells us that bovine tubercle bacilli abound in market milk, butter and

cheese, and to partake of these products is to invite premature death.

Some guardians of the public health sometimes shoot wide of the cold fact in an effort to sustain a point and maintain their position. They have been looking for something, found a resemblance, and jumped at a conclusion, which is one of the easiest things in the world to do. However, I am impressed with the value of painstaking findings in the laboratory; I recognize the fact that it has revealed a cause of many human specific diseases, and the channels through which they are communicated, and while the laboratory has shown us that certain of them are said to be communicable through dairy products, it has also proven the entire possibility of having a perfectly safe, raw milk produced upon a basis that is economical and efficient. And so far as can be demonstrated, so good. And upon that basis we should predicate the work of sanitary inspection of dairies.

I think all will agree that there are two diseases of man which may be readily communicated through milk, namely, typhoid fever and diphtheria. In the case of sporadic typhoid a quarantine should be established to include all persons that have anything to do with the care of the patient, to prohibit such persons coming in contact with market milk. All milk utensils of the dairy should be cleansed in boiling water and kept independent of the dwelling that contains the patient, and when such patient has recovered, they should not come in contact with any feature of the dairying that has to do with the milking of the cows, caring for the milk or of the milk utensils, until complete recovery of the patient is accomplished. And the same general rule and precaution should be applied in case of diphtheria on the farm.

As to bovine diseases that are transmissible through milk, we are not so certain about. A few are said to be communicable to man. I think all will admit that the propagation of animal diseases of the lower order are uncommon in man, and were it not for some measure of partisan phase in the present world-wide tuberculosis campaign, we would scarcely hear anything

about it at all; and I do not mean to infer by this that the ill-health of the dairy cow has no bearing on the well-being of the community. I am convinced that any ill-health of the herd brought in contact with the consumer of dairy products is a menace to health through the possible transmission of the products of disease, ptomaines, toxines, etc. But that specific animal disease is rarely transmitted through dairy products is equally admissible.

It is important that any disorder of the udder of the cow be taken carefully into account and to exclude all milk where the udder is undergoing any process of inflammation, including all forms of abscesses and tumefactions. Human defilement of the milk is more serious because that feature can be constant, while polluted milk from animal sources in many instances is self-limited. The animal while ill is quite apt to cease the secretion of milk; therefore, there is none to pollute. But man, in his ignorance, has been known to produce a temporary scourge in the community with some form of human disease while engaged in the vocation of vending the innocent cow's milk. No other feature of dairying is of greater importance than an intelligent conception of safe-guarding milk while in the environment of human disease, and this especially applies to typhoid, diphtheria and human tuberculosis.

One of the uppermost questions in the dairying industry of to-day is bovine tuberculosis, and I believe it is not wide of the mark to say that this question is the least understood and the most misunderstood of any of our economic problems. The national government is doing nothing to eradicate the disease, and no two contiguous states are working in harmony to that end; and I know of no one state that has made any appreciable practical progress along any line in that direction.

If we put the question to the veterinarians of the country to name a method embracing an indispensable factor as the first step to be taken in a national campaign in an effort to reduce the frequency of disease or to wipe it out, it is safe to say that three-fourths to eight-tenths of the replies would name tuberculin as

the first and most essential factor in the fore rank of such a campaign. And this is due largely to an acquired feeling of self-sufficiency or ignorance and a desire to work in abeyance to any further light on the efficiency of this agent for the time being at least. And until we can reverse such a belief and feeling in the mind and heart of the profession in the same proportion, we will continue to have tuberculosis of our herds in about the same magnitude as it exists to-day. And is this not due to the blind and idolatrous confidence that many veterinarians entertain in regard to the accuracy and efficiency of the tuberculin reaction which has obscured the fact of the measure of its efficient value? I think we will all agree as to the merits of its diagnostic value; it will tell us that a cow has tuberculosis in some form or other if the disease exists in the animal—and there it stops. It defines nothing. And that is the stumbling block over which we are prone to fall. You say to me, as you understand right and wrong, that a certain boy is bad. Very well, but I am bound to inquire as to the measure of his evil conduct, and if such simply deserves parental correction and advice, or is his conduct such that it becomes a matter for a police court to adjudge, or is his crime such as deserves death. The natural inquiry comes back to the accusation: How bad is this boy? And when that has been determined, proper justice can be administered in the case.

But in the case of bovine tuberculosis, tuberculin accuses and prejudice kills the animal; and then investigates the nature and magnitude of the accusation.

My belief is, we will make progress by going slower and advising dairymen to first have a careful physical examination made of their herds, and remove every objectionable feature and then institute and maintain features that parallel nature in the domesticity of the cow, such as wholesome, clean stables, well lighted with windows, equipped with an efficient system of ventilation so that the air of the stable is pure, provide wholesome, nutritious food, abundance of pure water and a little outdoor exercise daily during the months the cattle are housed, and have the herd examined by a veterinarian at least twice each year.

And, as a finale, if the dairyman desires a tested herd, he could apply tuberculin as a matter of gratifying his fancy rather than an economic means, and when the veterinarian has carried the dairyman along three or four years with this method, nine out of ten will not ask to have their herds tested, and, so far as the public health is concerned, it would be wholly unnecessary. And such method remain a common practice until we know more about the nature of the disease, and work out a more efficient indicator.

I believe the veterinarians of the country should rise to the needs of the situation and, step by step, solve this problem. The country practitioner should be a student of the question, enlightening his mind and enlarging his horizon of reason. This is our problem, and we should be able to work out the solution by individual effort and not rely entirely upon conclusions hastily constructed, until the present situation is changed; in which reason and facts shall be the guiding star, we can expect nothing short of fads running along lines out of all proportion to practical needs.

The efforts of the profession to-day are seemingly in one direction, that is, to prove the accuracy of tuberculin, and to slaughter cattle, putting the burden on the cattle-owners of the country. If one-half of the effort and money that has so far been expended in this direction could have been utilized in devising means toward preventing the propagation of the disease in cattle, we would no doubt have been a good step on the highway of progress by this time in the direction of solving the issue.

There are phases of the disease in cattle that are of little importance if unmolested, and the present surface efficiency of tuberculin makes no distinction between the progressive or quiescent stage, and neither does it reveal the presence of an open or healed or calcified lesion, as distinctive, one from the other. The reaction character is the same in any event, and until the practitioner realizes the importance of a tuberculin that can make a distinction and not disturb the animal economy or arouse quiescent or calcified forms of the disease into activity,

we will continue no doubt, to destroy the bovine wealth of the country, which practice the majority of us will surely condemn later on.

A healed tubercular lesion bears no relation to any dangerous forms of the disease; it is but a scar as evidence of a former infection, which nature has imprisoned, and it is of little importance whether it contains virulent or non-virulent bacilli or none at all. Its influence is nil. To kill a cow that simply carries a healed tubercular lesion is not solving an economic problem or safeguarding the public health. It is simply a needless destruction of the dairyman's property.

As matters are to-day it would be safer, and, I believe, more economical to prohibit all tuberculing of cattle except it be done by the Department of Agriculture, and the post-mortem passed upon by the state veterinary college, to determine the nature of the lesions, and a graduate indemnity paid to the owner of cattle on the basis of these findings and upon any carcass in which none but localized, healed or calcified lesions are observed, the owner should receive more than the market value of the animal as alive, in lieu of her undoubted future actual worth in the dairy, as nearly all cattle carrying such lesions are practically harmless, and such rule should apply to all milk-producing cattle under ten years of age; as present-day intensified dairying means that the cow pays for herself each year. And upon all carcasses in which no disease is found, the owner should receive double the market value of the animal as alive.

If the state is going to take up this question and attempt to solve the problem, as recent legislation indicates, then the state should bear the burden of the experiment and anticipate all value. As things have been and are to-day the burden of this experiment is put upon the cattle-owner, who is a loser in every event, to a greater proportion than is fair.

I believe it should be reversed, which would then mean that the state adjust this question in the interest of taxpayers, cattle-owners and consumers of dairy products, and if this be done in the interests of public health, as is the present exalted claim,

then let the public treasury make good all losses. Under such conditions the whole question would be a public issue, because it is not satisfactorily and conclusively demonstrated to cattle-owners or consumers of milk that every tuberculous cow is a menace to public health; and in the meantime the state should devise ways and means of properly adjusting the question, taking into account the co-ordinate interests of the producer and consumer as a basis upon which to proceed, instead of glorifying the findings of one or two little calcified or healed tuberculous lymph nodes as proof of the accuracy of tuberculin to justify killing a harmless cow. And this feature in all its phases is a part of the general question already alluded to, in which the veterinary inspector of dairies should occupy a conservative attitude toward the question in his effort to improve the status of sanitary dairying, as the whole phase of dairy inspection will enlarge in proportion to the public's appreciation of pure food, standing on the practical side of the question.

The matter is coming to the front, and one of the greatest needs in this field to-day is for men who are competent to do the work. The whole scope of the work is scientific in nature and cannot be worked out from the layman's standpoint. Put on that basis under a good state system of dairy inspection, the community at large could then procure a uniform, safe product.

I see no reason why New York City should have the best milk at the exclusion of all other cities in the state. Why not Buffalo, Syracuse and Albany have just as good. In fact, all other cities and villages in the state that depend upon market milk should have an equal opportunity of procuring a safe article.

Milk is a universal food and it should possess a universal measure of excellence.

Dairying is a feature of farming that rightly belongs to the Department of Agriculture to administer. As I see the need for direction and the opportunities for improvement in one of the greatest industries of our state, it seems to me that through such a channel the best general result could be obtained.

The value and efficiency of such work would be its uniformity, covering the whole state; the right of such a system to operate would be recognized as the only legal authority in matters of this kind; instituted upon a basis of co-operation along lines to improve the cultivation of the soil, increasing its productiveness, and thereby reduce the cost of maintaining the cow and to improve her as an individual, augmenting her bodily resistance to disease and this, as an educational dairy improvement campaign throughout the state, would mean, on the one hand, an increase of utility and wealth of our farms, and, on the other, provide an economical safe food to meet the increasing demands for such, in urban life.

HORSE SAVES LIFE OF CHILD.—One of the most miraculous escapes from a horrible death is alleged to have been witnessed by the people of Lexington, Ky., several days ago, when a baby girl, five years of age, was (according to the story) snatched from under the wheels of a passing locomotive by a horse belonging to the Frank P. Sullivan shows. The marvelous rescue is said to have been witnessed by hundreds of people, who stood, gazing spellbound and thoroughly terror-stricken, at the spectacle.

Mazeppa, the educated horse, was being led to her tent at the fair grounds by a stableman, and had just reached the railroad track when the warning bell of the fast approaching train was heard, too late, however, by the little girl, who was attempting to cross the track. The child was in the middle of the track, when, suddenly looking up, she saw the huge engine scarcely twenty yards away, and stood too terrified to move. With a bound the mare was away from the groom and rushed toward the helpless infant. The onrushing locomotive was almost upon the child when the animal dashed onto the track, seized the clothing of the child in its mouth, and with a leap, sprang from under the very wheels of the engine as it went roaring by.

Mazeppa bore the little girl to the sidewalk, where it was received by its almost crazed parents. This feat of daring and heroism is the most remarkable ever witnessed in Lexington. Thousands of persons visited the animal in her tent at the Blue Grass fair, where she was being exhibited, and praises of both the horse and owner are being sung over the entire blue grass.—*(The Rider and Driver.)*

WHAT MUST THE CATTLE OWNER DO TO PREVENT THE DISSEMINATION OF TUBERCULOSIS AMONG HIS CATTLE?

EXTRACT FROM A LECTURE DELIVERED DURING "AGRICULTURAL WEEK" IN
POSEN ON JANUARY 21, 1909, BY PROFESSOR DR. PAUL ROEMER, MARBURG.

Translated by WILFRED LELLMAN, V. S., Professor of the New York University.

The answer to the question representing my subject is extremely difficult and important. However, in spite of this, I believe that my intended explanations may be abridged somewhat, since my confrère has already mentioned a number of important measures for the suppression of bovine tuberculosis, with which I agree with him on the main points.

I. THE HYGIENIC SUPPRESSION OF BOVINE TUBERCULOSIS.

As already stated by Dr. Miessner, hygienic measures and protective vaccination are our remedies against bovine tuberculosis.

The hygienic suppression of bovine tuberculosis is limited to the surroundings of the animals to be protected. We try to keep away the disease-causing bacillus from healthy cattle, and since its last source is a diseased animal, the latter receives our special attention. But we also consider the danger threatened by those tubercle bacilli that have been already excreted by the diseased animal. The sum total of hygienic measures in this direction, acknowledged by science and practice as useful, is best represented by the known schedule of the Danish professor, Bang. Bang demands in the first place isolation, viz., all animals reacting upon the tuberculin test should be isolated. It is evident that the hygienic suppression of tuberculosis does not require the isolation of animals that cannot spread the disease, but knowledge as to whether a certain tubercularly infected animal will ever become dangerous or not. The strictest isolation of the animals

which have been recognized as tubercular by the tuberculin test, in a separate stable and with separate attendance, is a compromise with practical conditions; inasmuch as it permits the further use of the animals, while at first the killing of all tubercularly infected animals was demanded.

According to Bang's program, all animals are to be considered healthy that did not react upon the tuberculin test and which a clinical examination has proved healthy, and further, all newborn calves, even those coming from tubercular dams. This healthy division, which is kept strictly separated from the reacting animals, must now be protected against such tubercle bacilli as may find their way to it by inanimate things. Hence the injunction of the employment of special stable utensils, of special attendants and, above all, the demand to sterilize the milk to be fed the young calves. Besides, by frequently repeated tuberculin tests of the healthy division, the tuberculous animals overlooked at the first examination must be found out, and every newly acquired animal must be accurately tested with tuberculin before it is placed with the healthy animals.

Ostertag's method, a modification of Bang's, demands a clinical examination of the herd and the elimination of animals with open tuberculosis, since only these excrete tubercle bacilli and hence endanger the healthy animals. In a certain sense, Ostertag's method presupposes that a clinical examination will discover the really dangerous animals to such a degree that the result will be an efficient keeping down of tuberculosis dissemination. An important adjunct of these purely clinical examinations is the animal-experimental examination of the milk of tuberculous herds, that is, the milk of single animals suspected of udder tuberculosis, as well as the entire milk of a herd, and also the raising of young calves on sterilized milk, of which I am not entirely in favor.

I will state that I am not in favor of raising young calves on sterilized milk. From the standpoint of tuberculosis suppression, on the other hand, this demand is fully justified and it should therefore be considered, whether the danger of tuberculosis in-

fection by raw milk, or the danger of raising an inferior animal is to be preferred, or how can both be lessened to a minimum; for the demand must be made in the interest of a normal development of the calf and it should receive raw milk at least for a few weeks.

If you do not see your way clear to raising your calves with heated milk, there are three other courses open to you:

(a) To feed your calves with raw milk, but only from the udder of such dams or nursing cows that are free from udder-tuberculosis and which have not reacted upon the tuberculin test. However, this is not always practicable, since it is sometimes difficult, particularly where many calves are born, to obtain a sufficient number of healthy nurse cows.

(b) Experience has taught us that the digestibility of sterilized milk for suckling calves can be greatly improved, if small quantities of raw milk are added to the heated milk. But I do not deny that probably this method, too, is rather complicated for usual conditions. Therefore, only a third way is left to us.

(c) To raise the calves with raw milk, but only from the udder of the dam, and this only, if a clinical examination has proven the non-existence of udder-tuberculosis in the herd in question, and if the milk of your dairy is tested periodically as to the presence of tubercle bacilli by bacteriological-animal-experimental examinations.

From the above you have no doubt seen that the demands of hygienic tuberculosis suppression, if they are actually to meet all requirements, are hardly practicable, and that we are compelled, taking into consideration agricultural conditions, to modify the severity of these demands and limit them to the absolutely necessary requirements.

II. PROTECTIVE VACCINATION AGAINST BOVINE TUBERCULOSIS.

It is therefore not astonishing if we look for further means of suppression and if we appreciate the fact that there is placed at our disposal a vaccine against tuberculosis. It is probably known to all of you that von Behring was the first to prove that cattle can be artificially immunized against tuberculosis to such

a degree that a succeeding artificial infection of proper dosage does not harm the animals and that a stronger dose of the injected virus causes less extensive tuberculous changes in them than in non-vaccinated animals.

The principle of protective vaccination is the same as that which has proven such a boon to mankind in the well-known pox-vaccination by Jenner, in Pasteur's anthrax vaccination, and other protective vaccinations. The vaccine represents human tubercle bacilli which are injected into the blood of the animal in the form of an emulsion. Von Behring's vaccine is known under the name Bovovaccine.

Objections as to the Utility of Bovovaccine.—Within the last years objections have been raised by scientists, who believe that Bovovaccine is not destined to aid us in the suppression of bovine tuberculosis, although they admit the correctness of the scientific principles underlying the method.

Permit us to analyze these objections as to their significance. The reference to technical difficulties attending the injection of Bovovaccine is made only by those who do not possess a sufficient amount of practice. I wish to add here that Bovovaccine is now supplied in ready for use emulsion, which formerly the Behringwerk refused to do until exhaustive tests as to the stability of the vaccine in this form had been made. Another simplification is that the Bovovaccine is now to be injected only once, but in a larger dose. This recommendation too is possible only now after sufficient experiences have been gathered as to the action of a large dose in the already infected animal. For it cannot be avoided in practice that occasionally tubercular animals are vaccinated, and especially during the first years of the introduction of Bovovaccine the cattle owners felt inclined to subject also the older animals to the protective vaccination.

Another point has been raised, namely, that the single bovo-vaccine preparations differ materially as to virulence. Bovovaccine contains live tubercle bacilli which, although harmless for cattle, cause tuberculosis in guinea-pigs. We ourselves have introduced a new method for testing the virulence of bovo-vaccine,

which permits the determination of the most delicate differences in the virulence of the different operation numbers of the vaccine. Our examinations thus far, which we expect to report in the near future and which also include tests as to the stability of our vaccine, will prove the uniformity of the preparations placed on the market by the Behringwerk.

Further, mention has been made of the danger attendant upon the use of live tubercle bacilli as a vaccine, for the human and for the bovine species. According to our experience, an accidental infection by means of bovovaccine requires a particularly high degree of awkwardness on the part of the operator. The only case cited in the literature where a veterinarian is said to have contracted a skin infection through bovovaccine has, as far as I know, not been brought before the scientific world in such a form as to permit of discussion.

Still more theoretical was the objection that bovovaccine bacilli might be excreted by vaccinated animals through their milk. If the bovovaccination is performed as per directions, this danger is absolutely excluded, and the Imperial Board of Health states quite correctly: "If the immunization of cattle is performed according to Behring's directions, an excretion with the milk, of the injected tubercle bacilli need not be feared."

The pretended dangerousness of bovovaccine for the bovine species does not exist, if only healthy animals are vaccinated and vaccination is not performed in such herds where latent calf-pneumonia prevails, since in the latter case the vaccination may cause a breaking out of the disease. As far as the action upon tubercularly infected animals is concerned, this does not appear to be specially harmful in general. At any rate, upon inquiry of the gentlemen who possess a somewhat extensive experience with bovovaccine, I did not get any information in this direction, but, in accordance with former reports, several of the owners state that they are under the impression that bovovaccination has had a favorable influence upon calves already infected with tuberculosis. Even if we could not find this fact confirmed in experiments we made along these lines, these frequently recurring state-

ments in numerous reports deserve attention. The fear of many that bovocaccine might cause tuberculosis even in the healthy animals has been disproved once for all, as also the assumption that after remaining in the animal system for a long time, the bovocaccine might acquire disease-causing properties of a higher degree. On the contrary, the examinations of the State Board of Health have proven that $3\frac{1}{2}$ to 5 months after vaccination the bovocaccine bacilli are destroyed in the animal system.

We can therefore recapitulate: *Bovocaccine, applied according to directions by a veterinarian, is harmless for the healthy bovine.*

I shall now take up another one of the objections, viz., that bovocaccination affords but a slight protection. It is difficult to decide what is to be designated as "slight" or "strong" protections, since there does not exist an absolute standard, and not one of the criticising authors has been able to produce a vaccine which causes a higher degree of immunity than bovocaccine.

Lastly, it has been pointed out that the protection afforded by bovocaccine is but transient and limited to about one year. It is true experiments have proven uniformly that the immunity caused by bovocaccine, as well as that caused by any other vaccination method, expires gradually. Although the protection limited to one year surely tends to prevent or moderate numerous infections, it is certainly desirable to lengthen the period of immunity as much as feasible, and, as far as we can judge to-day, this is possible by a repetition of the vaccination after the first year, and in some cases also after the second year of the animal's life, in order to produce an actual protection of at least two or three years' duration. Such a repeated vaccination is nothing new in its principles, since anthrax vaccination, too, must be repeated every year.

If I have just limited bovocaccination to at most two repetitions, viz., at the beginning of the second and in some cases the beginning of the third year of the animal, this was not done without a reason. Before we discussed the excretion with the milk of the injected bovocaccine bacilli. This question of great prac-

tical importance also has been examined by the Imperial Board of Health very carefully, with the result that live human tubercle bacilli injected intravenously can indeed be excreted with the milk. But the examinations made in this direction do not pertain to bovovaccine, but exclusively to the other protective vaccine, viz., tauruman, or the culture gotten from same, therefore, a vaccine which is far more virulent than bovovaccine. In our own examinations which, however, are not quite completed, the transmission of bovovaccine bacilli in the milk of cows, which had received intravenously the largest permissible dose of bovovaccine, could so far not be detected. The question therefore remains still open, whether with bovovaccine an excretion of bacilli with the milk takes place at all; but since extensive experiences in this direction are lacking, we must at least admit that possibility that after the intravenous injection of bovovaccine tubercle bacilli may be excreted with the milk, for the present we have given strict injunctions to perform the last bovovaccination at the latest in the first month of the third year of the animal. However, should, as is the case in some districts, the young heifers calve before they are $2\frac{1}{2}$ years old, the last vaccination must not be performed at the beginning of the third year. Now, is the repetition of the bovovaccination, according to the above conditions, entirely harmless, considering especially the danger of milk-infection? Examinations at the State Agricultural Station have shown that the existence of intravenously injected bovovaccine bacilli in the animal system could be proven only up to $3\frac{1}{2}$ months after vaccination. After 5 months they disappeared entirely. Therefore an animal that is vaccinated in the first month of its third year is at the latest, at the age of 2 years and 6 months, free from tubercle bacilli, and for this reason cannot excrete them with the milk if it calves after that time. A repetition, therefore, of the bovovaccination at the beginning of its second and eventually its third year, can be undertaken unhesitatingly as far as milk-infection is concerned.

Other Vaccines.—After the appearance of bovovaccine, other preparations have been placed on the market, all of which

are based on the same principle, namely, the introduction of live tubercle bacilli in a form not dangerous to the animal. One of these preparations has the disadvantage that it was introduced into practice only three years ago and experiences with it are therefore less extensive than those with bovovaccine. The Imperial Board of Health has ascertained that this preparation is a vaccine of much greater virulence than is bovovaccine, and that furthermore the injected tubercle bacilli remain in the organism of the vaccinated animal for a longer period (up to six months), and that after the intravenous injection of this same vaccine, tubercle bacilli find their way into the milk of cows, which cannot be proven after bovovaccine injections.

The Belgian professor, Heyman, intends to protect cattle by introducing under their skin virulent tubercle bacilli enclosed in reed sacs. The tubercle bacilli are said to remain in the sac, but produce immunity in spite of this. According to the reports thus far, the immunity caused in this manner is but slight. The practical experiences are too limited, to permit an opinion as to the value of this method.

If we theoretically put together the demands to be made for an ideal protective vaccine against tuberculosis, the vaccine would have to answer the following requirements: It should be easy of application, surely not dangerous for man and animal, and cause an immunity which resists the most severe artificial and natural infection and endures throughout the life of the animal. By heating, and also passage of human tubercle bacilli through the system of the salamander, Klimmer claims to have produced vaccines which are harmless for all animals. I am inclined to the belief that Klimmer's vaccines consist of dead tubercle bacilli, which, according to Koch and Behring, do not produce immunity in the bovine.

Theoretical Considerations.—Apparently, it is a natural phenomenon that a tubercular individual possesses a greater resistance against a new infection coming from without than a normal individual. Paradoxical as it may sound, the tubercular individual is immune against tuberculosis, but he is well under-

stood only against a new infection coming from without, and apparently not against the infection already existing in his system. The fact that I was able to demonstrate this by means of the guinea-pig, the animal most susceptible to tuberculosis, confirms my opinion. I shall briefly sketch such an experiment: We infect a number of guinea-pigs with a small dose of a slightly virulent tuberculosis culture. After several months the animals, which in the meantime have become chronically tuberculous, receive a large dose of a more virulent culture, and non-tuberculous guinea-pigs are infected in the same manner. While the latter soon succumb to the severe infection, the twice infected guinea-pigs are not influenced at all, or very little, by the second infection, but they succumb gradually to the progressing first infection, just as if they had been infected only the first time. These determinations, which apparently are only of theoretic interest, imply a hope in the usefulness of boovaccination.

The Efficacy of Bovovaccine in Practice.—Now what does boovaccine do in practice? The protection produced by boovaccine is, like every immunity caused by vaccination, not an absolute one. In cases of particularly severe natural infection, the protection often will not prove sufficient; but that does not signify a general inefficiency of the vaccine, as a practical means of tuberculosis suppression.

The first condition, we might say, the fundament for a just opinion of the value of protective vaccination must be, that before the introduction of the vaccination we must know exactly to what degree the herd is tuberculosis-infected. If we neglect this, then it may happen (and it has happened), that when several years after the introduction of protective vaccination, the owner tuberculin-tests his cattle for the first time, and finding that possibly about 30 per cent. of the animals react, discontinues vaccination, frightened by the apparent non-success, although tuberculosis in his herd may have been actually materially decreased. Therefore, a previous tuberculin test should be made to ascertain the degree of infection in a herd, in order to get a mental pic-

ture of the tuberculosis infection. Furthermore, it would be very desirable to know and record the numbers representing the loss through tuberculosis in the herd before the introduction of bovovaccination; direct losses, represented by the number of animals that died of tuberculosis, as well as indirect losses through the rejection of slaughtered animals on account of tuberculosis, etc. Of late, in the work of tuberculosis suppression, there is a decided inclination to neglect these points and to be guided solely by the percentage of tuberculin reactions.

By what means then are we to judge, in a herd with whose degree of tuberculosis-infection and losses per year through tuberculosis we are thoroughly familiar, whether a protective vaccination method or another method of suppressing the disease is successful?

Within the last few months, I have received seventeen reports of bovovaccinations. One of the reports reads: "The vaccinated animals, especially in some of the herds, contrast favorably with the non-vaccinated cattle, as to constitution." Another report says: "We have gained the impression that the vaccinated animals are conspicuous by their better development, faster growth and better health (good appetite, glossy coat), as compared with the calves of other years, if an experience of only three years' duration is sufficient to form an opinion. Of course the good development of the animals enhances their value." In a third report, the following statement is made: "So far we have had good results from vaccination; the calves thrive much better after it." I wish to point out that the last report concerns a herd so severely infected that, according to the veterinarian's report, the owner was unable to sell a single animal, on account of general tuberculosis. There were no means for other sanitation of the herd, and as a last resort I therefore decided to try vaccination. And, as the report states further, from this herd which apparently was past remedy, "several were sold, several slaughtered, and upon post-mortem examination the animals did not show a trace of tuberculosis. A vaccinated bull calf has even

been used as a breeding bull since the spring of this year. However, this test is of the greatest interest for this reason, that the owner cannot take the precaution to separate the vaccinated calves from the older animals of his herd and thus protect them from tuberculosis.

From an agricultural point of view, the question of a higher valuation of cattle is of course all-important, and I myself must confess that a step in this direction would seem to me a decided progress, even if I could not prove any progress by means of the tuberculin test.

Tuberculin is another means to ascertain whether tuberculosis in a herd has decreased. But some difficulties exist as to its use for determining the value of protective vaccination. In consequence of the vaccination, animals may react upon tuberculin without being tuberculous and, on the other hand, tuberculous animals may not be susceptible to tuberculin. Therefore, tuberculin would be absolutely unadapted for the proving of tuberculosis in a vaccinated animal, if it were not for the fact that the susceptibility is but temporary, and that the non-susceptibility of tuberculous animals, too, as experience has taught me, is but temporary. In my opinion, if we tuberculin-test vaccinated animals one year after their vaccination, all positive reactions show that the animals in question are tubercularly infected, and all negative reactions $1\frac{1}{2}$ years after vaccination, that the animals are in all probability free from tuberculosis. Accordingly, I consider the tuberculin-test of value to a certain degree, but it must be utilized with some precaution.

I myself have received in two reports valuable tuberculosis statistics, one from a large concern where tuberculosis was so far advanced, that after long hesitation it was decided to do something. On this estate the animals are raised for the milk; they are on four different farms and, besides protective vaccination, no other measure was employed. It is to be regretted that exact dates are lacking as to the degree of tuberculosis infection before introduction of the vaccination. Two years after its introduction,

however, a tuberculin test was performed on the four farms, with the following result:

<i>Reactions in.</i>			
A	B	C	D
o 71.05%	57.78%	27.07%	12.17%
? 7.90%	11.11%	15.79%	12.17%
+ 21.05%	31.11%	57.14%	75.66%

In the herds C and D bovovaccination was not introduced, but the calves in A and B were vaccinated. The differences in the number of reactions are no doubt striking. The herds C and D serve so to say, as an illustration of the degree of infection without protective vaccination. But the objection might be raised that perhaps the herds A and B were in the very beginning less infected. However, this was not the case, as may be seen from a comparison of the tuberculin tests made on these two herds in the years 1908 and 1907:

	1907.	1908.
Herd A.....	o 22.95%	71.05%
	? 32.79%	7.90%
	+ 44.36%	21.05%
Herd B.....	o 33.61%	57.78%
	? 13.45%	11.11%
	+ 52.34%	31.11%

From the above a material decrease of the positive reactions is evident, and an enormous increase in the number of non-reacting animals. The result is still more baffling, if we combine the result of the two herds:

Reactions in A and B.

1907.	1908.
o 30%	63.85%
? 29%	9.64%
+ 50%	26.51%

o=negative
 ?=doubtful
 x=positive

} reaction

What seems particularly remarkable in these statistics is the occurrence of numerous doubtful reactions to the tuberculin tests one year after protective vaccination, a result which we have obtained already several times, and this fact has also been ascertained by the Imperial Board of Health. Indeed the tuberculin test one year after the vaccination gives us rather an indistinct picture because of the numerous doubtful reactions. If, for instance, we study the results of tuberculin tests made in the vaccinated and non-vaccinated animals:

Reactions in 1907 of:

(a) Vaccinated Animals. (b) Non-vaccinated Animals.

o 28.8%	30.8%
? 37.6%	11.2%
+ 33.6%	58.0%

We find, just as has been ascertained by the Imperial Board of Health, a decrease in the number of decidedly reacting animals, but not a decided increase of non-reacting animals, and this is attributable to the fact that with vaccinated animals doubtful reactions are remarkably numerous. Naturally the question is of interest, whether or not these doubtful reactions signify the existence of tuberculosis.

The statistics of a tuberculin test of the same 101 vaccinated animals, which were tested once in 1907 and once in 1908, will serve to clear up this point:

1907.	1908.
o 30.69%	54.45%
? 38.62%	12.87%
+ 30.69%	32.68%

These numbers show us that evidently the largest percentage of the animals classed as "doubtful" in the first year, must be considered as non-tubercular, since in the following year they did not react any more, while only a small percentage now reacted positively, so that the number of positively reacting animals has

increased somewhat; but still more has the number of doubtful reactions risen. The report states further: "This progress is due solely to the Behring method of vaccination," for other methods of tuberculosis suppression were not employed.

I do not believe that in each case where hygienic measures are neglected entirely, so decided a success can be obtained with vaccination alone, especially if milk infection of the calves is not prevented during the time immunity has not as yet set in after vaccination, that is during the first three months after vaccination the results of protective vaccination tested by means of tuberculin will often be negative.

But how the degree of tuberculosis infection in a herd can be modified, if the vaccination is augmented by the important hygienic measure of protecting the calves from milk infection, the following dates will show, which were obtained on the Hungarian estate Sarvar, by Dr. Strelinger. On this estate the calves are raised on sterilized milk. The degree of tuberculosis infection of this herd before the introduction of vaccination is represented by the following numbers:

$$\begin{array}{r} 0\ 31.7\% \\ +\ 68.3\% \end{array}$$

Since six years vaccination has been constantly practised according to the Marburg directions, and the last tuberculin tests, begun in 1908, result as follows:

$$\begin{array}{r} 0\ 90.4\% \\ +\ 9.6\% \end{array}$$

In this case, the tuberculin reactions have been judged fairly accurately, according to the principles agreed upon by the International Veterinary Congress at Budapest. As far as the ages of the vaccinated animals are concerned, the reactions are divided as follows:

Animals Vaccinated.

(a) 5½ yrs. ago. (b) 4 yrs. ago. (c) 3 yrs. ago. (d) 2 yrs. ago.			
0 90%	86.2%	92.8%	90.6%
? 10%	13.8%	7.2%	9.4%

From these numbers it appears to me that the tuberculosis protection during the first year is by far the most important, as otherwise a greater number of reactions ought to be found in the older vaccinated animals.

The following statistics may be specially instructive. A tuberculin test of two groups of animals, 16 immunized and 12 non-immunized, which were kept in a severely infected stable under equal conditions, had the following result:

(a) 9 mos. after the Experiment was Begun.		(b) 4½ yrs. after the Experiment was Begun.	
(1) Vaccinated.		(2) Non-vaccinated.	
0	100%	25%	93.75%
?	...	25%	...
+	...	50%	91.7%

All these are data sent me upon request for material on which to base an opinion as to the value of the protective vaccination.

III. CONCLUSION.

And now I should like to consider the practical question which no doubt during my lengthy explications has forced itself upon you, namely, the question: What are we to do in practice? We possess hygienic measures against bovine tuberculosis, and we also have the protective vaccination. Are we to vaccinate? It is a fact that by vaccinating, we enhance the resistance of the bovine for a certain time and that it is possible to prolong this protection until the third year of the animal's life. Technically, the vaccination does not offer the slightest difficulties, and hygienically, according to my opinion, there need not be any hesitation either for the veterinarian or for the animal, if the vaccination is performed by a competent person. According to practical experiences so far, a conclusive opinion would be premature at the present time, in how far bovovaccination can aid us in the war against bovine tuberculosis. But in spite of this, I believe I am

justified, on basis of the foregoing explications, to answer the question: "Shall we vaccinate?" in the affirmative. Not only in the interest of science, but because I am convinced that it would be a grave consequence of the skepticism emanating from different sources, to abolish a means of tuberculosis suppression, which cannot lay claim to absolute worth any more than other measures, but the importance of which must be admitted because of its scientific basis; because of the experiences so far, and especially because the efficiency of many hygienic measures is still quite doubtful. That my conviction is not only theoretical, but that I also put it into practice, may be demonstrated by the fact that in those agricultural circles where I am related or connected, I have insisted upon the introduction of protective vaccination.

The question, which one of the recommended vaccines should be used, has already been answered in my explanations.

And lastly, the further question, Shall we use hygienic measures, and if so, which? The strict adherence to Bang's demands under the present conditions seems to be an actual impossibility. Ostertag's organizations are no doubt a useful means for the suppression of tuberculosis, and where they exist they should be made use of and appreciated. Where their introduction is not possible, at least the point should be considered, which in my opinion is the most important in the hygienic suppression of tuberculosis: avoidance of milk-infection in the young calf.

To sum up, the requirements for the suppression of bovine tuberculosis are: The introduction of and strict adherence to protective vaccination; besides, as far as feasible, the employment of hygienic measures acknowledged to be useful; under no circumstances should the most important of these be neglected: the elimination of all animals with open tuberculosis, and avoidance of the dangerous milk-infection in the young calf.

At the State Dairymen's meeting on December 15, Dr. J. F. De Vine spoke on the control of tuberculosis through existing laws.

SUBCARTILAGINOUS ABSCESS OF THE FOOT.*

BY GEORGE H. BERNs, D. V. S., BROOKLYN, N. Y.

Among the many obscure causes of lameness in horses, I know of none in which the symptoms are more securely masked than the condition which I shall try to describe under the head of "Subcartilaginous Abscess of the Foot of the Horse." The obscurity of its symptoms in its early stages, the destructive changes it produces in the parts involved and the complications it invariably leads to, are no doubt responsible for the fact that its existence and its importance as a primary factor in the production of many very serious diseases of the equine foot, seems to have been entirely overlooked by veterinarians; for as far as I know, nothing has ever been published on the subject. While I have been actively engaged in practice among heavy draught horses for over thirty years, it was only two years ago when I recognized my first case of subcartilaginous abscess; and becoming much interested in the subject, I have looked for this condition in all complicated foot cases of obscure or uncertain origin; and found that many cases of synovitis of the coronæ-pedal joint, suppurative coronitis, circumscribed or diffused, abscess and extensive necrosis of the coronary ligament, pododermatitis, run-around, terminating in the casting off of the horny foot, chronic ulcers and fistulous tracts of the pastern, synovitis of the tendon sheath of the deep flexor, and other severe foot troubles were directly traceable to subcartilaginous abscess. All of these conditions are usually ascribed to traumatism, such as nail pricks, calk wounds, lacerations from projecting clinches, toe and quarter cracks, suppurating corns, accidental injuries; and while I believe that the majority of the milder cases of pododermatitis

* Read before the forty-sixth annual meeting of the A. V. M. A., Chicago, September, 1909.

can be traced to one of these causes, I am convinced that a certain number of the very severe and unmanagable cases originate within the foot as subcartilaginous abscesses and are probably due to the same obscure causes which produce fistulous withers and poll evil, so minutely and accurately described by Dr. W. L. Williams in an article published in the September number of *Veterinary Journal* in which he proves that both of these conditions are as a rule not due to traumatisms, but originate per se—one in the bursæ under the ligamentum neuchix at the poll, and the other in a fenestrum situated under the neck ligament approximately opposite the space between the second and third dorsal spines.

To describe subcartilaginous abscess, I can do no better than to give a brief history of the first few cases that were recognized, their symptoms, termination and post mortem appearances.

CASE NO. I.—In October, 1907, a gray gelding about 10 years old, in good condition, owned by F. K., a grocer, had been slightly lame on the near hind leg for a week or ten days prior to my being called. The owner had his foot examined and finding nothing abnormal, bandaged his ankle and applied liniments to his hock. When seen by me his hock, canon and ankle were somewhat swollen from the effect of the treatment. He showed considerable lameness on being backed out of the stall, toe touching the ground only and quickly jerking up the foot the moment the weight was released; going ahead in a straight line he moved fairly well, but still favored the limb and showed the characteristic gait of foot or pastern lameness.

The shoe was removed, foot, pastern and ankle carefully examined and nothing abnormal could be detected except that he evinced a slight amount of sensitiveness on the outside wall of the foot on the tap of a hammer. The sole was carefully pared down, nail holes probed, frog bars and heels examined, and severe pressure exerted with a strong pair of pincers all around the plantar surface failed to make him flinch. No positive diagnosis was made. A pack of absorbent cotton, saturated in a so-

lution of acetate of lead was placed around the foot, pastern and ankle with directions to keep it well saturated and bathe the hock and canon with the same solution. Two days later when seen again, the patient was much lamer and when forced to move would hardly touch the toe to the ground. The swelling of the hock and canon had disappeared and the ankle, pastern and foot appeared perfectly normal; severe pressure with pincers around the margin of the foot failed to make him flinch, but on tap of the hammer to outside wall he would quickly jerk the foot up and keep it up. An injury to the outside of the pedal bone, a severe sprain of some of the deep-seated ligaments or possibly an incomplete fracture being suspected, the same conservative treatment was continued for two days longer; but the patient grew steadily worse and on my third visit he showed symptoms of great distress and severe pain. His body was bathed in perspiration, he kept moving the foot incessantly and when forced to back out of the stall he hopped out on three legs; temperature 103. On removal of the cotton pack, the ankle and pastern seemed perfectly normal, but a slight prominence of the coronary band on the outside of the foot, just above the sensitive spot in the wall which had been detected on the two previous visits, was observed. The plantar surface was again most carefully examined and severe pressure with the hoof pincers around the margin below the prominence of the coronet did not seem to increase the pain. Being convinced that the trouble did not originate at the bottom of the foot, I concluded that he would probably develop a coronary abscess and ordered hot antiseptic poultices frequently changed and applied to the swollen coronet. The next morning the patient's general condition was worse; temperature 104, sweating profusely, anxiety and distress depicted on his countenance, standing on three legs with the affected member off of the floor and in constant motion. On removal of the poultice the coronary band from heel to toe was badly swollen, felt doughy to the touch and a yellowish colored liquid oozed through its epithelial covering, but no fluctuations in any part of the band could be detected; but immediately above the superior bor-

der of the lateral cartilage on the outside of the pastern, I discovered a slight but unmistakable fluctuation. An incision parallel with the long axis of the pastern over the fluctuating point was made, and probably 12 or 16 drachms of a dirty brownish colored discharge escaped. The incision was enlarged sufficiently to admit my finger; on exploring the abscess cavity my finger passed directly under the cartilage between inner surface of cartilage and the capsule of the coronæ-pedal joint, revealing a cavity probably two inches in length and one and one-half inches in depth.

The cavity was thoroughly disinfected and packed with absorbent cotton saturated in the tr. of iodine. The foot and pastern were enveloped in aseptic cotton saturated in a bichloride of mercury sol. The next morning I found the patient very comfortable. His temperature was down to 102 and when forced to move, he placed considerable weight upon the affected limb. In view of the fact that it was impossible to properly drain the abscess cavity and that a quittor, if nothing more serious, would be the inevitable result, an operation was decided upon and the patient was sent to the hospital the same day in an ambulance. He was placed upon the operating table and the entire cartilage, together with a necrotic portion of the coronary band were removed, and the patient made a very satisfactory recovery and resumed his usual work in about six weeks from the date of operation.

CASE NO. II.—A medium weight draught horse owned by G. K., a milk dealer, was seen in December, 1907, lame on the off front leg and showing a large angry looking ulcer on the outside of the pastern. According to the owner, the animal had become very lame without any cause as far as he knew, some four or five weeks prior to my seeing him. He had the foot examined and finding nothing had treated the ankle and pastern with wormwood and vinegar. The horse had gradually grown lamer until a large sore broke out on the outside of the pastern, which he had poulticed for a week or more, but as the sore con-

tinued to suppurate and showed no tendency to heal, I was called to see it. The ulcer was situated over the lateral cartilage and consisted of a granulating surface several inches in diameter with two fistulous openings, which being probed, were found to extend under the lateral cartilage. A diagnosis of quittor was made and patient sent to hospital for operation.

A semi-circular section of the wall was removed and the cartilage extirpated according to the Frick method, and we experienced no difficulty whatever for the inner surface of the cartilage was completely separated from the capsule of the joint, which, in my opinion, proved that a subcartilaginous abscess had been the starting point.

CASE No. III.—In March, 1908, a very heavy cart horse of the bushy legged Clydesdale breed and owned by A. B., was very lame on the near hind leg. The driver claimed that he had calked himself in backing a heavy load. The foot had been poulticed for a week or more and when seen the animal was excessively lame. Coronary band about five times its normal size with pus oozing from several points, and the outside heel, quarter and most of the toe almost completely detached. A diagnosis of pododermatitis was made and an unfavorable prognosis given. No radical operation was attempted. The foot was bathed in a sublimate solution, a number of abscesses around the coronet laid open and dressed with iodine and pure carbolic acid, but we failed to arrest the inflammatory process, for the horse lost his hoof and was destroyed two or three days later. Post mortem revealed complete detachment of lateral cartilage and an open coronæ-pedal articulation. The opening in the capsule being directly under the detached cartilage.

Two other cases of synovitis of the distal phalangeal articulation came under my care about six weeks ago. They were brewery horses five years old, in good condition and worth about \$500 each. According to stable foreman and attending veterinarian, both animals had calked themselves. When seen, both showed necrotic ulcers of the pas-

terns discharging large quantities of synovia and were very lame. As the animals were very valuable, operations were attempted on both. They were brought to the hospital in ambulances on August 1 and operated on the same day. The first horse had an ulcer on the outside of the pastern directly over the lateral cartilage on the off front leg; we found the cartilage completely detached and an opening in the capsule of the joint as large as a five-cent piece, exposing the condyles and articular surface of the joint. As in our opinion there was little or no chance for a satisfactory recovery, the cartilage of incrustation was as near as possible removed from the articular surfaces of the joint with a curette; the operation completed in the usual way. The horse is still living, wound healing rapidly and complete ankylosis of the joint has taken place. Since the operation he has had little or no elevation of temperature, his appetite has been good and he has lost but little flesh. He moves about in his box stall and places considerable weight upon the affected limb; but unfortunately the toe only touches the ground in a forced position. About ten days ago we made an attempt to break up the adhesions and straighten the limb, which was anesthetized with 5 grs. of P. D. codrenin. A shoe with a brace attached to the heel was applied and an effort was made to force the ankle back to its normal position and thus lower the heel; but I regret to say that the experiment was a complete failure, and from present indications it is extremely doubtful whether the treatment of this horse will be a paying investment.

The second horse had an ulcer discharging synovia on the pastern on the inside of the near hind leg. His lateral cartilage was also detached, but as the perforation in the capsule of the joint was very small, we treated him on more conservative principles, contenting ourselves with removing the cartilage and all other necrotic tissue, thoroughly disinfecting the wound and dressing it antiseptically.

In three or four days he developed a temperature of 104, lost his appetite and gradually wasted away. He evidently suffered much pain for he kept his foot elevated from the ground and in

constant motion. About three weeks after the operation he was again placed on the operating table for a thorough examination and we found the joint not only wide open, but the ligaments had become elongated to such an extent as to leave a space of about half an inch between the condyles of the second phalanx and the glenoid cavity of the third, due to the pendulous position the leg was held in for three weeks. I am of the opinion that the synovitis in both of these horses were the results of subcartilaginous abscesses, and that the calk wounds mentioned above had probably little or nothing to do with its development; as the perforations of the synovial capsules were under the cartilages and not in front of the feet, where the joint is quite superficial and far more exposed.

Another case was brought to the hospital in the ambulance on August 29, sent by a prominent New York City veterinarian for operation. He is a gray draught horse of medium size and in good general condition. He was very lame on the off hind leg, showed a granulating ulcer about two inches in diameter on the outside of the pastern, directly over the supero-posterior border of the cartilage, with a fistulous opening in the centre discharging a dirty grayish colored pus. On probing the sinus we found that it extended for several inches in an inward and downward direction.

The coronary band was somewhat enlarged and the lateral cartilage seemed more prominent than usual. Unfortunately I was unable to obtain the history of the case as the veterinarian above mentioned was out of town when called up on the telephone. He was operated on the following day. The fistulous tract was laid open and on inserting my finger I found the posterior portion of the lateral cartilage detached and the fistula terminating in a pus cavity situated between the sesamoid ligaments and the sheath of the flexor tendons and extending clear across the pastern. An incision was made extending from the fistulous opening in a downward and backward direction through the skin and coronary band to the horny wall at the bulb of the heel. The coronary band was separated from underlying struc-

tures and the skin dissected from the cartilage and laid back. On removing the cartilage we found that only its posterior portion was detached and showed the familiar green slough usually found in quitters. The underlying tissues showed traces of an old abscess, the pus of which had evidently burrowed in an inward direction and caused the cavity between the tendon sheath and ligaments above mentioned, and finally ruptured on the surface, causing the fistulous tract and skin ulcer. The pus cavity was thoroughly cleaned and disinfected, all necrotic tissue removed, and as it extended clear to the skin, covering the inside of the pastern, a counter opening was made on the opposite side and a piece of gauze saturated in iodine was passed through from side to side. The skin wound and coronary band sutured and the foot dressed as in ordinary operations for quitter. When I left Brooklyn five days after the operation, the patient was very comfortable and placed a little weight upon the foot when forced to move. His appetite remained good, there was no swelling of the limb, no elevation of temperature and the dressing had not been disturbed. From present indications I have reason to hope for a satisfactory recovery unless the sheath of the perforans tendon becomes involved or some other unforeseen complications arise.

While my experience with this condition is limited to the few cases cited above, I am convinced that it is the direct cause of many of the serious, complicated and unmanageable diseases of the foot, and if detected in time, many cases may be relieved by the judicious application of the surgeon's knife.

Two original articles in this issue furnish food for thought by those in daily contact with the milk production problem, one by Claude D. Morris, an American veterinarian, whose opportunities for a practical study of the question are boundless. Inspection of dairies is his daily life, and has been for many years, and his article is valuable because it is the result of his convictions resulting from his life among dairymen, studying dairy problems in the field. The other is a translation, by Wilfred Lellman, from an address of Prof. Roemer, Marburg, Germany.

THE VETERINARIAN OF TO-DAY AND WHAT HE ADVOCATES.*

BY WALTER G. HOLLINGWORTH, D.V.S., UTICA, N. Y.

I am a veterinarian and I am glad of it. Why? What better record can a man have than to relieve a dumb animal of its suffering, being able to control the spreading of the infectious diseases of live stock, and lessen the death rate and suffering of the community. That is what the educated veterinarian of to-day is doing.

With the popularity of the automobile it has caused the veterinarian to take up a new line of thought or stimulate an old one, and that is sanitary medicine. It is better to prevent disease than to cure it. There is no reason why the veterinarian is not more capable to handle the question of sanitation rather than the politician, for the simple reason he has been educated during his course at college for just such work. The faculties of veterinary colleges are devoting much more time to this science and are trying to give their students a good substantial structure to build a framework so to speak, which will make them efficient workers and whose services will be sought for. And being so familiar with the open country, he is in a position to show results if he is only given the opportunity, and the places where results are obtained are where the law is at his disposal, and, such being the case, we should unite in an harmonious way and work together to get proper legislation placed upon the statute books.

The communities are commencing to emphasize sanitation rather than disease, the public when they are satisfied what the veterinarians are capable of doing, are going to demand veterinary inspection. We are living in a progressive atmosphere—the

* Read before the New York State Veterinary Medical Society, Ithaca, August, 1909.

opportunity is fast growing, and we are ready to grasp it, the sooner the better, as the propagation of the human race is bound to exist. What father or mother can spare a child without suffering a great loss, and when we look at the statistics and see that a major percentage of the babies die before they reach the age of two years, is not some one to blame? The large percentage of their deaths are due to intestinal disorders, and the major part of them are due to polluted milk, not always due to the condition of the farm, but to the household. The veterinarian would be able to lessen the death rate in the community where he resides. How? By personal inspection along the lines of milk and meat. The community depends on the open country for food and water, and for them to thrive and exist it is necessary to have a wholesome diet. The producer owes a duty to the consumer and that is to produce such, and the consumer owes a duty to the producer, and that is to pay for the cost of production of the same. There are a very few families that have not directly or indirectly had the unpleasant occurrence some time or other of some sort of infection due to polluted or diseased food. But why or how long are precious lives to be sacrificed when such conditions can be so readily checked. Why not close the jaws of death in human families due to such causes—we know not when some of our own will be trapped.

Up to a short period of time this Empire State, which should rank first in agricultural interests, has been gradually going down the ladder so to speak, and thanks are due Governor Hughes for his keen foresightedness in seeing a way to check this condition of affairs, which means so much to the health and prosperity of our state. We cannot replace what we have lost, but we can and are doing a very complimentary work, which cannot be but gratifying to the chief executive. The producers are to-day being encouraged instead of discouraged, and I know of no one who is better qualified to take up this problem than the veterinarian. Why? Because he advocates three things essential to the prosperity of the farmer: first, education; second, legislation; third, inspection.

By education the producer must be educated to be progressive in regard to his farm and buildings. The community cannot exist without him. We are dependent upon him, for he is naturally a practical man; if not, he could not produce the crops he does in the short time allotted to him as far as the seasons are concerned. He wants encouragement and we should see that he gets it. We advocate anything to uplift the conditions of rural life. The veterinarians are in a position to give information in regard to care, etc., of live stock, which is so often asked at farmers' gatherings. We try to impress sociability instead of drudgery on the farm. By education of the farmer he becomes progressive in establishing agricultural societies which promote meetings and live stock shows. Implements and products of the farm improve breeding of live stock suitable to different parts of the state, advance ideas for the preservation of the forests, demand veterinary inspection. Improve horticulture, investigate proper fertilization of the soil; and become students of botany and sanitation.

The good roads movement means all sorts of wealth to the rural districts, a gilt-edge investment for the state; but they must be cared for and protected. How many producers are unable to get their produce to market, except a few months in the year, due to the impassable condition of the roads, and the loss of live stock would be hard to estimate due to the same condition. Look wherever a road has been improved and observe that immediate improvement in the condition of farms takes place. The great advantage is the lessening of the cost of delivery and better services can be given, deserted farms become occupied, which means more farm products for the ever-increasing population, which according to statistics is $1\frac{1}{4}$ per cent. over the deaths. It means better educational facilities for the sons and daughters of the rural districts, which is very much neglected in some parts of the state. Improve the school system and the result will be better agriculturists. We must encourage the farmer who can send his sons to an agricultural school, the ideas which will be taught him will be brought home, if he has the proper chance, and he will so regu-

late the farm that the result will be gold in return, and his results will be copied by neighbors, and by so doing the agricultural interests of the locality will be greatly improved.

LEGISLATION.—Whatever laws are enacted for the benefit of the agriculturalist will help us, and consequently we are only too anxious to use our influence with our respective Senators and Assemblymen to see that such and such bills are reported and passed. The farmer meets with many losses due to irresponsible firms—houses with no financial backing, etc., and the producer ought to be secured. He is in no position to lose money for products that have been harvested, his loss is enough when it is due to the failure of crops, which is no fault of his. Our aim is to be progressive and energetic citizens and, such being the case, we are naturally a public benefactor.

In regard to inspection, this is of the most importance because we are dealing with a problem in regard to the health of our live stock interest and the community as well. The sanitary conditions of the rural districts are the secret of the health of our cities to a large extent, and here is where some radical changes ought to take place if we want this state to be classed as progressive in sanitation. The dairyman wants to be encouraged in whatever he does to improve his herd and buildings; he should be complimented and given credit for same. In some parts of the state the inspection is very distasteful to the dairyman. Why? Because the so-called inspector is ignorant in regard to such work; it is more than likely he never saw a farm before he secured the position. How much better it would be if the inspectors were veterinarians; being duly qualified, they would be met with open arms rather than the way the present one is received, and I do not know but the farmer has a perfect right to act as he does.

The veterinarians are gradually seeking the rural district to practice their profession—and much to their credit. The large cities would get much better results if they employed the veterinarian in such locations where they get milk supply to look after the sanitary conditions of the farms; he would know how to

work to get the results required. The trouble with the so-called inspectors is they know so little about this work that they think a farmer can change his unsanitary condition to sanitary almost immediately. I will tell you this is a slow job; do one thing at a time and do that well and so continue, and by so doing you will find the score card will show better results from one time to another. Where many farmers are handicapped is due to the fact they are tenants; the owners have moved to the city or village and for some reason lose interest in their old homes, where they have accumulated enough of the world's goods to live in comfort, but they look for the rental just the same. I cannot comprehend why they are so neglectful. You cannot expect the tenant to use his hard-earned money to improve the condition of buildings which he does not own, and maybe he is only to stay a year or two; but it is necessary to impress on their minds that it is more economical to have a healthy herd than a diseased one, and whatever is done to improve the condition of live stock, good returns will follow. The cost of cleanliness is very trifling, and it can be looked after when work on other things is at a standstill.

If it were possible to estimate the death rate and loss in monetary value of live stock due to the unsanitary condition of farm buildings, directly or indirectly, the result would be appalling, and there is no doubt that immediate legislation would be forthcoming, but such conditions are looked upon as a matter of course—they always did exist and it seems that they are likely to exist for some time to come. The conditions are very much like that of tuberculosis in the human family in former days till the crusade of prevention found its birth.

The sanitary conditions of the suburban districts are not looked after so closely as the urban districts, because they lack the inspection necessary to improve such conditions, and for this reason epidemics are very often traced to the open country, the same being conveyed to the cities very often through its milk supply. In regard to milk as a carrier of disease, take for instance the typhoid germ. I need only to quote that Whipple

writes in a general sort of way; it may be said that in cities at the present time 40 per cent. of typhoid fever is due to water, 25 per cent. to milk, 30 per cent. to ordinary contagion, including fly transmission, and only 5 per cent. to all other causes. Then there is scarlet fever, diphtheria, tuberculosis, gastro-intestinal disorders, as before mentioned, which must be considered. Now taking such conditions under consideration, is the veterinarian asking anything unreasonable when he advocates scientific inspection, and by scientific inspection we would legislate and administer for health to the live stock and country, and to accomplish this public and private income would incessantly have to be spent. This leads to a very important issue and that is to pay strict attention to honesty. Place the funds where the best results will be forthcoming. We must teach and demonstrate health and let the community know we are to an encouraging degree trying to give our services as if we really wanted to live ourselves as well as other animals. It comes to this question: Are our cities and towns expending funds to the best advantage to prevent disease? The time will come with the crusade that is developing in regard to prevention of sickness when it will be a disgrace to have an outbreak of an infectious disease, and this brings to mind what the great Pasteur once said, that it was within the power of man to eradicate the infectious diseases from the face of the earth.

When I read from Albany the death reports of various cities I always wonder how much of that could be lessened if the state had a proper inspection service inaugurated. We must not stop at milk inspection, for there is another of much importance, and that is meat inspection. Can it be wondered why there is so much ptomaine poisoning in the human family when we consider what an amount of meat is put on the market for food that has never been inspected—more than half I dare say. Half inspection is better than none, but why should we not have entire satisfaction? As long as this condition is allowed to exist, the low class butchers will thrive and flourish at the innocent community's expense, which means sickness and death. With meat inspection,

not only meat would be inspected, but the slaughter house also, and such places would necessarily be required to be put in a sanitary condition.

In closing this paper, my wish is that the veterinarians of this state use every honest effort to make it possible to put themselves on record as being champions of higher educational facilities, especially in the rural districts, and the necessity of competent inspection, along with proper legislation to carry out such good work.

THROUGH the courtesy of Dr. J. G. Rutherford, we have had the pleasure of seeing the report of the Minister of Agriculture for the Dominion of Canada for the year ended March 31, 1909; a very instructive book of 152 pages, which reminds one of the immense live stock industry of that country, and of the manifold duties of the live stock commissioner.

THREE valuable bulletins issued by the U. S. Department of Agriculture toward the end of November, 1909, are No. 121, "The Need of Controlling and Standardizing the Manufacture of Veterinary Tetanus Antitoxin," by John R. Mohler, V.M.D., and Adolph Eichhorn, D.V.S.; No. 379, "Hog Cholera," by M. Dorset, M.D., and Circular No. 68 (Revised), "Diseases of the Stomach and Bowels of Cattle," by A. J. Murray, M.R.C.V.S.

A SOUTH DAKOTA subscriber sent the following clipping, probably from one of his local papers, the name of which he did not mention:

"*An All 'Round Man.*—The Headlight man has a western correspondent who travels about some and who usually sees things as he goes. He sends us a business card gotten out by a genius at Nez Perce, Idaho, which is as follows: 'Dr. Cunningham, The "Shure Winner" Veterinary Surgeon, Auctioneer and Evangelist of the Boss Barn, Nez Perce, will Doctor Your Horse, Cry Your Sale or Preach Your Funeral. You pay your money and Take Your Choice. If you don't see what you want, please order it. All kind of experience. Agent for the "Easy Wringer" Mop.' It would seem that a man so resourceful ought to be able to live through a hard winter."

EQUIPMENT OF VETERINARY COLLEGES.*

By A. R. WARD, BERKELEY, CAL.

By a chance combination of circumstances, I find myself undertaking the handling of a portion of the committee's labors, while fresh from a visit to fourteen veterinary colleges in six countries of Europe. Without attempting to give the official names of these institutions, it will suffice for identification to mention the name of the city in which each is located: Dublin, Liverpool, London, Edinburgh (Dick), Alfort, Brussels, Utrecht, Stuttgart, Giessen, Munich, Dresden, Berlin, Hanover, Copenhagen. The difficulties of language in a foreign country naturally hinder the ready formation of correct opinions of various features of such an institution as a veterinary college. Nevertheless equipment is a feature that can be taken in at a glance.

I am not one of those who believe that our American schools should be slavish imitators of European models in every particular. But it must be recognized that those schools are older, with the accruing benefit of experience. In a broad way, a study of European schools gives one a view of a more highly developed educational system and certainly enables us to foresee conditions to which we either should be tending or which we should be avoiding.

I shall mention in brief compass some of the more striking points in the equipment of the European schools, and shall not particularly emphasize comparisons with American conditions.

BUILDINGS AND GROUNDS.—In nearly all the schools one is impressed by the generous scale of equipment in the matter of buildings. I do not have data at hand to give information in

* Presented at the Meeting of the Association of College Faculties and Examining Boards Chicago, Sept. 6, 1909.

terms of square feet of floor space in the buildings, or in acres of ground, but submit in lieu of these a few post cards.*

The Hanover school (No. 1) illustrates the scale of the grounds of a Continental school. The schools of the British Isles do not measure up to those across the Channel in this respect. The next five cards give an impression of the scale of the buildings at Hannover and at Giessen. Some idea of the character of the construction at Hanover is to be had from the next card (6A), showing a lecture room. Note furniture, stained glass windows, frescoes, busts, wainscoting, and ceiling. An unsatisfactory glimpse of Alfort is afforded by the next three cards. The gate (No. 7) opens on to the court containing the statues to Bourgelat, Trasbot, and Nocard. The memorial to the latter is shown in the next card. Bourgelat was the founder of the French veterinary schools and lived from 1712 to 1779. The Alfort school itself dates from 1765. The sight of these tasteful memorials and their surroundings impressed me with the age, stability and dignity of the veterinary profession in France. Perhaps the obvious comparison with American conditions was rendered more striking by the fact that the day before I had visited one of the pioneers of American veterinary education, Dr. Liautard.

At Alfort a considerable number of students are housed in the dormitories as shown in (No. 9).

Bearing in mind the general size of buildings as shown in the cards, some impression is conveyed by the statement that Munich has eight large buildings: Dresden, ten; and Brussels, fourteen. For example the new college in Brussels has separate buildings for residence of director, administration, serums and vaccines, small animals, heating plant, medicine and surgery, shoeing, feeds, pathology and bacteriology, physiology and histology, anatomy and zootechnics, contagious wards, incinerary. The observations left me with the impression that our state schools will do well when locating buildings to provide for the possibility of enormous expansion in the future.

* The cards referred to were not furnished the publishers.

CLINICS.—Clinical instruction is very sharply segregated into specialties with independent equipment and instructors. Among such clinical departments noted, but perhaps not all in our school, are those embracing medical and surgical wards, small animals, ambulatory instruction, polyclinic, shoeing and hoof diseases combined.

The general equipment of instruments and apparatus for surgical work is excellent. One gathers the general idea that each professor of surgery in Germany has invented an operating table different from any other. It was interesting to note in this connection that the Royal Veterinary College in London seemed to be getting along nicely without a table. The main details of the equipment of the surgical department at Stuttgart as to apparatus may be enumerated as a fair example of that of the German schools; covered tanbark riding academy for rainy weather, completely equipped sterilizing room, electrically propelled machine for paring hoof, gas heaters for firing irons, tables and cases on rubber tired casters for instruments, disinfectants, dressings, etc., wash room for operator, x-ray apparatus, laundry, student room with lockers, and a veritable museum of instruments, old and new.

I happen to have at hand an enumeration of the equipment as regards the building for surgery at the school at Munich, which may be given as another typical outfit. There the surgical department has a waiting room, living rooms for assistants, hot and cold water, foot bath stalls, together with thirty-four stalls for patients.

In most instances space allotted to medicine is the same as that given surgery. These subjects quite often are housed in a large building with identical wings for each.

Small animal clinics are managed entirely independent of other departments. That at Munich is one of the best in the matter of equipment. Among the features noted were as follows: Separate wings for medicine and surgery, animal cages have wire floor permitting the attainment of extraordinary cleanliness by flushing beneath, bath rooms with varied sizes of

tubs, power clippers, accommodation for fifty-four medical cases, thirty-three surgical cases, cupboards for medicines with numbers corresponding to cage numbers, inhalation room, cat ward, kitchen, bird ward with tank for aquatic birds, indoor and outdoor cages for the same patient.

Professor Regenbogen's building for small animals in Berlin, included the following departments: Birds, toxicology, surgery, clinical laboratory, polyclinic, surgery, separate wards for distemper, skin diseases and non-contagious cases, pharmacology and pharmacological museum, x-ray room, photographic room and chicken yard stocked with types of breeds of fowls.

I came away from my visit to these two places making comparisons with some American Veterinary colleges as to size.

Specialization in clinical work is very strikingly illustrated by the work on shoeing, the hoof and its diseases at Munich. These lines of work occupy a commodious building. Students are trained in making shoes and in shoeing in a department provided with twelve forges. An x-ray outfit is in use. The museum of the hoof department contains a unique collection embracing thousands of specimens of the following classes of objects: development of hoof, pathological alterations such as malformations, sidebones, etc., security shoes for slippery pavements, shoes for correcting defects, shoes of faulty construction, historical collection of shoes, etc.

The building houses an experimental station for the study of the hoof, and also a teaching institution for blacksmiths. There is accommodation for sixteen men who study a course for three or four months followed by examination. I understood that this is compulsory upon professional horse shoers.

Insistence upon a thorough training at the forge and in shoeing is by no means restricted to the Munich school.

OBSTETRICS.—Considerable variation was noted in the facilities for instruction in obstetrics. In quite a number of places a dairy herd, maintained at the college for instruction in animal industry was available for illustrating normal parturition. At

Utrecht there were fifteen cows. They are planning to purchase each week a cow heavy with calf, for class room purposes. These will be bought in the cattle market and selected with special reference to the probability of difficult parturition. In Munich cows are purchased for purposes of instruction.

MUSEUMS.—The museums of veterinary colleges were of special interest, as they are the storehouse of very important adjuncts for the teaching of certain subjects like anatomy, surgery and pathology. At Alfort the museum contains a magnificent collection of bones showing the insertions of muscles, etc., by means of colors painted on the bone. These included single bones of every kind. One particularly striking specimen was that with half of the skeleton of a horse's trunk mounted in a case with accurate designation of such complicated matters as the insertions of muscles on the ribs and vertebræ.

Other preparations of use in anatomy were synovial sacs injected with colored plaster, sections of bones of the flesh-producing animals and of those liable to be fraudulently substituted, colored plaster models of the various dissection regions, ligament preparations, models of lymphatics, mercury injections of certain tissues, colored models of transactions of legs, brain regions modeled and colored, teeth of all domesticated animals in all stages of eruption, dissections of skull at different ages, showing location of molars, tooth sections, and abnormalities, etc.

Other branches of instruction represented in a similar thorough way are pathology, zoology, botany, helminthology and teratology.

The museum at Utrecht was particularly rich in specimens of monsters, being second only to Berlin in this respect. At Utrecht, too, were a profusion of delicate dissections of eye, ear, skull, together with injection of guttural pouches, wax models, etc.

Such magnificent collections of objects of unquestionable value for instruction cannot be had for money. They must be

accumulated by the labor of successive generations of professors for a century or more.

Card No. 10 gives a glimpse of the skeletons in the museum at Alfort, of which there were some thirty. No. 11, a similar view at Hannover, and No. 12, the museum cases at Hannover. No. 14 shows the lecture room for anatomy at Hannover.

BOTANY.—The facilities for instruction in this subject are rather prominent in several schools where botanic gardens are maintained. For instance, at Alfort, the students are required to study eighteen hundred plants growing in the garden. The collection comprises drug producing and poisonous plants, forage crops besides representations of a large number of genera of wild plants.

The garden at Hannover contained representatives of 235 genera with 305 of their species and 63 of their varieties native in Germany, Asia Minor, North America and the Far East. In addition there were 200 species of grains and forage plants, 70 species of poisonous plants, 60 species of drug-producing plants, 250 representatives of other plants, 25 aquatic plants, and 30 more characteristic of swamp and meadows. Does German thoroughness require any better illustration? This feature was also particularly prominent at Utrecht and I was impressed with the value of this adjunct of instruction.

ANIMAL INDUSTRY.—Facilities for instruction range all the way from paper maché models to a herd of cows, found at Dresden.

GROSS PATHOLOGY.—Ample facilities for autopsies are the rule. One finds a properly constructed room set apart for the purpose, and equipped with trucks, tackle, trays, scales, burners, etc. The pathological institute at Utrecht is the most excellent of its kind that I encountered.

BACTERIOLOGY.—I feel very confident in asserting that elementary instruction in this subject is not so highly developed in

Europe as in some of our American schools. I looked in vain for evidence that students were trained in the preparation of media. Lockers abundantly supplied with individual outfits for students were missing. I learned from conversation with a student at Alfort that the microscopes in use there were inferior to those in the Veterinary College at Ohio State University.

I shall not venture so positive an opinion about the character of the equipment for the teaching of pathology, pharmacology and chemistry. I note, though, that Professor P. A. Fish on his visit to the European Schools was impressed by the fact that laboratory courses for undergraduates in such subjects as physiology, pathology and bacteriology could stand a higher degree of development.

RESEARCH.—When one considers the equipment and facilities at the disposal of graduate students, assistants and the faculty, he is impressed by their abundance. The amount of research work in progress bears testimony to the favorable conditions. This ultimately results in original books. Americans will continue to be under the necessity of translating German standard works until our colleges brace up in the matter of research.

CONCLUSIONS.

Perhaps it is superfluous to observe that the European schools are ahead of us in equipment.

According to my judgment, the remedies for our deficiencies consist in the attainment of the following conditions by a gradual process of change:

State supported schools. Four years of high school preparation for entrance. Four years of professional training.

THE annual meeting of the Connecticut Veterinary Medical Association will be held in Hartford, Tuesday, February 1, 1910.

THE Department of Agriculture has officially recognized the Arabian Horse Club of America. H. K. Bush-Brown, of Newburg, N. Y., is the secretary.—(*Horn and Hoof.*)

A FEW TRUTHS FOR FUTURE VETERINARY MEDICINE IN MAINE.*

By DR. B. F. JERVIS, HOULTON, MAINE.

In writing this humble paper I would ask you to bear with me in the few points that I wish to set forth. I thought that I would deviate from the usual course and not take up your time with a case report.

Firstly, I would ask, "Are we as veterinarians satisfied with the present existing veterinary sanitary laws in our state?" This worthy association has been founded for some fourteen years, more or less, and without a doubt has done a vast amount of good work for her loyal sons, under no small difficulties. But are we a great deal farther ahead now than at the date of its inception? Fourteen years of existence still sees all appertaining to the application of Veterinary Sanitary Law in the hands of a body of laymen and not a semblance of a state veterinarian.

Now, gentlemen, to your humble servant (and doubtless many here feel the same way), this does not seem to be right and proper in this enlightened age. Many of our sister states are setting us a good example on these lines, indeed lines that we might with great advantage follow; but still we sit back in our chairs and seemingly are content to be lead by a body of laymen, when we ourselves ought to take the lead, as men having the requisite training in the application of veterinary sanitary law and medicine. In talking casually of the matter to several brethren a diversified number of views have been aired. Some have said that a state veterinarian had been tried and proved a failure, others maintain that at the present time the veterinarian has not the requisite ability to deal with the farmer, and that it is necessary for him to have, as an intermediary, a layman or men in the shape

*Read before the Maine Veterinary Medical Association, Portland, July, 1909.

of the State of Maine Cattle Commission. The former of the theories seems to me to be quite childish. Because one state veterinarian appointed did not have the ability or tact to meet existing circumstances at that time, does it of a necessity infer that out of the membership of this association one cannot be found competent of filling such an office?

In regard to the other theory, what is there about the Maine farmer that is so different from farmers of other states that makes it so hard for the veterinarian to deal with? After five years of intimate knowledge of the Maine farmer, the writer finds that he is just an ordinary farmer, much the same as others of the same calling in other parts of this North American Continent, and I do not see what is to hinder us from dealing with and educating where needs be this terrible apparition, viz., the Maine farmer. The State of Maine Cattle Commission no doubt in time gone by was a necessity before the birth almost of the veterinary profession, but I maintain that now the time is come when the necessity of the commission is no more and that the application of the veterinary sanitary law should be under the control of the profession by reason of the training we have upon such lines. What would our medical brethren think of having the State Board of Health run by a body of laymen and politicians? I think they would very quickly get together and try and remedy it, even if the public at large did not. What is to hinder one good, live veterinarian, and if the public wish it, one or two laymen as well, taking up the work now done by three laymen, the veterinarian being the chief executive officer so as to insure the work undertaken being done in such a way as to be a credit to the profession. Who is better fitted naturally by his training to fill such an important office than the veterinarian? Certainly not the layman! What is the Cattle Commission at the present time doing towards eradication of tuberculosis? The amount is so small, in spite of the cheerful reports, that it is quite imperceptible. Then, again, the commission looks after nothing else at all but tuberculosis and glanders, and does not touch any of the many other contagious conditions that may from time

to time be met with. Of course no doubt they do all that any body of men could do with the same lack of knowledge on such things. Take for example section 2 of the act passed by this last legislature, viz.: "When the owner or owners of grade cattle shall make application to the State of Maine Cattle Commission to have their cattle tested with tuberculin, the said commissioners shall cause such test to be applied *when in their judgment it is necessary.*" Whether the commissioners are responsible for this bright piece of legislature or the legislative committee, I do not know. But why in anybody's judgment any cattle, grade or pure blooded, supplying milk to the public should not of a necessity need testing with tuberculin passes my comprehension. True it is that the commission looks into this in the cities, but how about the many hundred towns and villages where milk is sold to the public from cows never tested? And even if some herd owner from some of the small towns made application for the testing of their herd, in the judgment of the commission it might not be necessary. Now on the other hand, if these affairs were in the hands of veterinarians, or if there was a veterinarian on the board of cattle commissioners, it would at once be seen that it was more than necessary to test any and all cattle supplying milk to the public for consumption. In combatting tuberculosis from an economic point of view we must not lose sight of the acknowledged transmissibility to the human subject, especially infants. Then again, how is the disinfection, and so forth, of places occupied by animals found infected with contagious diseases carried out? Properly or not? More often not, as the commission demands of the veterinarian employed that he go and test or inspect his animals, and go back to his home just as soon after as possible, in order that his (the veterinarian's) bill may not be too bulky and leave the disinfecting, etc., to the owner, who, by the way, have very little knowledge of such things, but more often has not the least conception.

Secondly, I would ask, "What do the public at large think of us as a body? It is pretty safe to say that a vast majority of people that we have to deal with think that we are quite incapable

of doing anything in regard to the investigation of contagious diseases without the supervision of this body of laymen. In fact many men have shown me, and doubtless many of you have seen communications from members of the commission, describing lesions of diseases and so forth that might well be inserted in *Puck*, and when the veterinarian takes upon himself to explain matters in a proper light, the explanation so differs from the one received from the layman that the poor vet. is relegated to the background, and put down as a poor fool.

Thirdly, and lastly let me ask, what does the profession at large think of us as a body of veterinarians? No doubt a number of you have read the proceedings of the forty-fifth meeting of the A. V. M. A., but for the benefit of any who may not have read it I cannot do better than to answer this question by quoting word for word the report offered by Dr. D. Arthur Hughes. After a general review of veterinary sanitary law in New England, the doctor goes on to say:

"In my opinion, veterinary medicine in the state of Maine as adjudged by the primitive live stock sanitary law and its execution must be in a sorry plight. The 'report of the cattle commission on contagious diseases of animals' (1907) is one of the amusing documents to which I have just referred. It is given up, almost entirely, to tuberculosis, which certainly is rampant in the state, yet the head of the cattle commission, a whilom farmer over anxious to spend the state's money so that he will not be criticized, has statements like this abounding in the report: 'Tuberculous cattle are not all sick, and it should not be understood that way, and there is no doubt a certain per cent. will recover.' Again, 'And the most important question for the Maine dairymen to consider is whether they will continue to destroy animals by the tuberculin test whenever it is practical or whether they will condemn in the future only by physical examination.' Could there be more abominable English written? Could there be anything any more inane than the doctrine expressed? Oh, for a live, zealous veterinarian like Dr. S. H. Ward, of Minnesota, to take hold of the work in Maine! Oh, for

a reform in the Maine law giving such a veterinarian the leadership!"

Therefore, gentlemen, it behooves us as a body to remove this stigma placed upon us. Let us in a solid body rise, as a giant refreshed with wine, and show the profession at large that in our midst we surely have a live, zealous veterinarian, who can take the reins of leadership in spite of Dr. Hughes' doubts. Let us do all in our power to bring about such a happy condition of affairs, and then formulate such laws to be presented to the legislature that instead of being ridiculed by the profession, they may be a pattern of perfection, to be admired and perhaps copied by a great many other states. And furthermore let us continually bear in mind the dictum that live stock sanitary law and its application reflects the veterinary intelligence and education of the region.

W. H. MCINTYRE, the new president of the Carriage Builders' National Association, hails from Auburn, Ind. He is a builder of motor vehicles as well as horse drawn carriages and is an optimist as to the future of both branches of the vehicle industry. In his address at the recent annual meeting of the association, in Washington, he said:

"Any one who believes that the carriage building industry of this country is on the decline is certainly not acquainted with the figures reported by governmental and other statisticians. That some branches, grades and styles of construction have been injured by the advent of the automobile has not been disputed, but there were 1,500,000 horse drawn spring vehicles built in the United States this year. The number of automobiles built in 1909 is estimated at 90,000, and the whole number of those in running condition in the United States is probably not more than 175,000. How many are on the scrap heap is another matter. In 1897 there were 13,500,000 horses in the country, and their average value was \$37 each. Ten years later the number of horses had increased to 20,600,000, with an average value of \$95 each, and to-day there are 23,648,000 horses, together with 4,240,000 mules, in the country, and the number of horse drawn vehicles built this year is twenty per cent. greater than in 1908."—(*New York Herald.*)

DIVISION OF THE POSTERIOR TIBIAL NERVE.

By COLEMAN NOCKOLDS, VETERINARIAN FIRST CAVALRY, U. S. A.

To be concise, any chronic, painful affection of, or in the proximity of the Tarsus, more especially ankylosis of part or the whole of the articulations, inveterate spavin or injury and pressure upon the local nerves, justify this operation.

The results should be immediate and brilliant, as the effect produced is a cessation of the constant tormenting agony to which the animal has been subjected in consequence of the pathological conditions which exist.

If this operation were more frequently performed, many an animal would be able to give several additional years' service, in the place of being led to the knacker's yard.

In the majority of hock cases relief can be produced by a posterior tibial neurectomy, but the nerve must be divided above the region in which the little cutaneous branch which distributes filaments to the inner side of the hock is given off. Experience shows that it is usually the inner portion of the hock-joint that is most affected and painful.

The regional, anatomical relation of the different structures involved should be noted, and are mainly as follows:

1. Integument.
2. Superficial fascia. Directly under the first and closely associated with both are the usual ramifications of the cutaneous nerves and blood vessels, chiefly consisting of, in this region, twigs from the internal saphenous nerve and vein, and the posterior tibial artery.
3. Deep fascia. A thick clearly defined, white envelope, which covers and binds the underlying structures, and is really a continuation of the Fascia Lata.

4. Posterior tibial nerve. This nerve lies in the space defined by the deep flexor of the digit (flexor perforans) in front and the tendo Achillis behind, between these there is a varying amount of connective tissue, but the nerve lies in front of the tendo Achillis, and in most cases is more or less adherent to it, being enclosed in a sheath, in company with a small artery and vein.

The posterior tibial artery lies quite a distance to the front of the site of operation just behind the tendon of the flexor accessorius; a little above the hock it forms an S-shaped curve; this brings it into close relation with the nerve, but below the seat of operation; there are fibrous bands given off the tendons of the gastrocnemius and inserted into the os calcis below, which must not be mistaken for the nerve.

The posterior tibial nerve is a continuation of the internal popliteal, it is at first deeply placed beneath the inner head of the gastrocnemius, but becomes more superficial as it emerges to the front of the tendo Achillis on the inner side of the leg, at the hock it bifurcates to form the internal and external plantar nerves.

Instruments needed are scalpels, rat-tooth forceps, aneurism needle, hemostatic forceps, needles.

If the animal is laid upon an operating table, a local anesthetic injected in the locality of the nerve above the seat of operation is sufficient; if cast upon the ground, general anesthesia should be produced and three legs secured with hobbles. The free leg should be held by passing a rope around the foot, and a side line attached to the limb above the seat of operation fastened to the fore leg.

The more care taken as regard asepsis, the better the result, and the operating site should be shaved the day before, and a sub-chloride pack kept on if possible until time for operating.

The site for the primary incision is in an animal of $15\frac{1}{2}$ hands high, about six inches above the point of the hock, at the top of the hollow caused by the space between the tendo-Achillis and back part of the tibia, and at least one-quarter of an inch forward from the internal border of the tendo-Achillis. The incision through the skin should not be less than one and a half inches in

length. The knife used for incising the integument should not be used again at the present operation.

Midway through each lip of the skin wound a strong thread should be fastened by passing a threaded needle through it and tying the silk. These are to be held by an assistant to keep the lips open and to draw the skin from the seat of operation; seize the superficial fascia with the rat-tooth forceps and incise the portion raised with the scalpel. This should expose the deep fascia, before cutting which twist with hemostatic forceps or tie any bleeding vessels, so as to have a clear field for operating.

The deep fascia can now be seized; it is very dense, and a strong pair of forceps are necessary, those of the rat-tooth pattern are preferable. Cut away enough of this fascia to allow plenty of room as the nerve is very rarely exactly in the position assigned to it in anatomies. It should be found, lying in a strong sheath, immediately in front of the inner side of the tendon-Achillis. There is usually considerable connective tissue found in this region; sometimes it is necessary to take quite a quantity of this away piecemeal, being careful so as not to conceal the site of operation; arrest hemorrhage as it occurs. It is as well to remember that there are no vessels in this region large enough to cause any serious one.

The covering of the nerve and its small satellites should be seized with the forceps, and the covering incised, when the nerve will be exposed and the aneurism needle, threaded, can be passed under it and the suture tied; at least half an inch of the posterior tibial should be taken away. Sometimes it may be necessary to introduce the finger into the wound and feel for the nerve; this should be lightly felt for, as it is almost impossible to distinguish it because of the thickness of its sheath, but by applying a light forward and backward motion, the nerve can be felt as it rolls under the finger. Great care must be exercised in deciding that the division takes place above the point where the cutaneous branch is given off. If it is thought that the incision of the nerve has occurred below this point, the smaller nerve can be found by exploring about one and a half inches to the front of the larger,

as it is given off almost at right angles to it before taking the downward direction. Unless the smaller nerve has been divided, the operation is not always a success.

Continued sutures are the best for closing the wound, and if the operation has been carefully performed, it should close by first intention.

The following gives a typical case and the result of a post-tibial neurectomy.

Bay mare, aged; 15¾ hands high; attached to Troop L, First Cavalry: suffering from anchylosed hock; very painful to the touch; very lame; affected for years; pain increasing for the last six months, constantly holding the foot up and moving it up and down; began to lose flesh about three months ago; at present in very thin condition; was recommended for condemnation and destruction. Has been treated by blistering, cunean tenotomy and other methods, without improvement.

Above animal was placed under an anesthetic and posterior tibial neurectomy performed. From the day after the operation the animal has performed equal exertions with the lame and sound limbs; appetite has returned, with the resulting better condition; the site of operation healed without complications, and the animal is doing the usual troop duties required. With the exception of a very slight stiffness due to the anchylosed hock, no lameness apparent.

WHY AUTOS FRIGHTEN HORSES.—This bit of brightness is said to have cropped out in a conversation between two Lawrence misses not old enough to go to school, says the *Kansas City Journal*:

“What makes a horse act naughty when he sees an auto?”

“It is this way: Horses is used to sein’ other horses pull wagons, and they don’t know what to think of ’em goin’ along without a horse. Guess if you saw a pair of pants walkin’ down the street without a man in ’em you’d be scared, too.”

REPORTS OF CASES.

VIS MEDICATRIX NATURÆ.

By E. A. WESTON, G. M. V. A., Launceston, Australia.

The following cases may prove of interest to some as serving to illustrate how apparently hopeless cases may recover without treatment of any kind.

Case No. 1 was a bay draft colt 4 years old. He had been loaned to my client to "break in," and was being used for light farm work, though his usefulness was considerably discounted owing to his having a cleft palate, which caused him to spit half his food back through his nose in a half masticated condition. I happened to be visiting the farm to see another horse, and my client asked my advice about the colt, which had fractured his tibia just a little above the hock. At the time of my visit he was standing in a stall, with a rope slung from the roof under his belly to keep him from lying down, and his manger was bespattered with half-masticated food. Taking into consideration his poor condition, his cleft palate and the expense of treatment, I advised my client not to bother with him, but he was not destroyed owing to his owner objecting. About a fortnight afterwards I was again at the farm and found the colt still in the same position, and with a beautiful provisional callus formed around the fracture. However I reckoned he would soon be tired of standing on three legs, and would make a mess of his leg by starting to put his weight on it. This I explained to my client, at the same time telling him the leg was doing beautifully so far. From this out I did not see the colt, but my client informed me that he never looked back, and on inquiring a few days ago I learned that he was still alive, and that the broken leg was as straight and sound as the other. It is now nearly two years since he met with the accident.

Case No. 2 was an aged "hack" used by the overseer on a large farm. I saw him one night, when my advice was sought owing to his having met with an injury to his hock joint. He was lying down, and on being roused up got up on three legs,

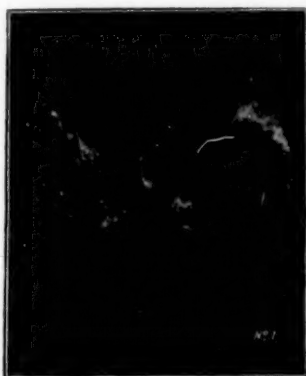
flexing the injured leg convulsively with the pain as he did so. Each time the leg was bent a stream of synovia from the joint squirted out like water from a syringe. On examination I found a punctured wound entering the main joint formed by the tibia and astragalus. The joint was inflamed and enlarged and the horse refused to put his foot to the ground. I explained to my client the seriousness of the case and advocated treatment by continuous irrigation and injection of peroxide of hydrogen. As, however, there were no facilities for treatment, and the horse was of little value, he was left to take his chance. I saw him several times during the next few months, and to my surprise the discharge gradually abated, did not become purulent, and finally ceased altogether. The swelling surrounding the joint was considerable and it was a long time before the horse dared to put any weight on the leg. I prophesied ankylosis of the joint, but again the outcome of the case did damage to my professional reputation. The swelling decreased considerably, and the ankylosis was only partial, sufficient movement remaining to allow of the old horse still being used occasionally for riding and driving.

Case No. 3 was a draft stallion affected with a form of papilloma which frequently affected the regions of the joints, and usually arises as the result of an injury. These growths resemble a strawberry or large piece of red cauliflower, and are very persistent, always recurring on removal unless the piece of skin on which they are growing is removed with them. This frequently means taking a considerable area of skin out of the front of the knee, fetlock, or coronet, which, of course, leaves a nasty wound requiring a long time to heal and leaving a prominent scar. Naturally I was loath to perform so drastic an operation, and treated the first cases I met with by simply cutting the growth off and cauterizing the base. Sometimes no further trouble occurred for a lapse of three or four months, but in every instance, sooner or later, the growth returned and grew faster than before. Microscopical examination of sections did not reveal any cause for this, as they merely showed an unusually dense fibrous structure. The growths on Case No. 3 were removed by cutting and cauterization, but recurred again in a couple of months larger than before. The owner of the horse would not have them operated on again, and they continued to grow slowly for nearly twelve months. At the expiration of this time a gradual atrophy set in and in six months they had completely disappeared.

SOME PHOTOS WITH EXPLANATORY NOTES.

By E. A. WESTON, G. M. V. A., Launceston, Australia.

Numbers 1 and 2 are from a case of laminitis which was diagnosed by one of the legion of quacks that infest this country, as pleurisy. When the poor horse's feet broke out round the coronets, the quack said it was the pleurisy breaking out between "'air and 'oof." Subsequently the patient was turned out and died during the severe winter which ensued. Photo No. 1 shows the sole of the foot, where the os pedis had perforated it at A. Photo No. 2 shows the large hoof, with the os pedis alongside, to show its relatively small size. The greater portion of the point (an-



terior extremity) of the bone had been absorbed by a rarefying osteitis, the result of pressure. The remaining portion is extremely fragile and open in structure.

Photo No. 3 shows ankylosis of the lower cervical vertebræ; it is taken from a young draft gelding my advice was sought about. The horse had been in good health up to within a few days of my visit, but had suffered for some time from a stiffness in the neck which prevented him from feeding off the ground, or out of a low manger. The only symptoms shown at the time of my visit were loss of muscular co-ordination. The horse tripped over every inequality in the ground, and reeled like a drunken man. When he put a leg out, one never knew where he was going to put it down. The owner suspected sprain of the shoulder muscles, as the horse had had his foot fast in a wire fence some short time previously. The enlargement of the bones was hardly

noticeable during life, but the symptoms and history of the case enabled me to render a diagnosis of interference with the motor tracts in the spinal cord, due to pressure probably caused by injury to the cervical vertebræ. I did not advise treatment, and the horse got down soon afterwards and was destroyed.



Photos Nos. 4 and 5 show what is probably a teratoma, or aborted ovum of some sort. The patient was a very valuable milking shorthorn, and I was called to attend her during difficult parturition. After delivering the calf, I removed the placenta and attached to it by the blood vessels which nourished it was the growth shown in the photo. It did not have a separate placenta, but was fed by vessels given off from that surrounding the normal calf. The growth was covered with an integument bearing a beautiful coat of hair, except at the point of entrance of the blood vessels which was bare. At this point was a cyst con-



taining mucoid fluid, with white masses floating in it. These masses proved on microscopical examination to be composed of epithelial cells (squamous). The remainder of the growth was solid, and divided into compartments by fibrous bands proceeding

from the integument. Within the compartments is a solid tissue resembling muscle which has undergone fatty metamorphosis.

Photo No. 6 shows a cow with what I believe to be a tubercular udder complicated by a mixed infection. The enormous enlarge-



ment of the worst affected quarter and its corresponding teat is well shown in this and in Photo No. 7, which was taken with the cow lying on her back. Photo No. 8 shows the interior of the ud-



der with caseous areas thickly sprinkled throughout it. Along with these are loculi filled with a thin purulent fluid. (Unfortunately this is not as clear a picture as I could have wished owing to the color of the background not giving a sufficiently sharp contrast

and the day being a dull, windy one.) Photo No. 9 is taken from a divided sublumbal lymphatic. All these glands were markedly enlarged and the photo shows the white, miliary tubercles studded throughout them. In addition to the sublumbal, the mesenteric, renal, hepatic and bronchial glands showed caseous areas, and the lungs themselves were extensively diseased, while the kidneys and liver showed isolated tubercles. This cow had been the property of a milkman supplying Launceston, and for some time during the progress of the disease in the worst affected quarter, the milk from the other three had been utilized. No doubt some poor mothers hereabouts are wondering why their babies have developed cachexia.

GLANDERS—IMMUNE.

By FRANCIS ABELE, Jr., Quincy, Mass.

May 19, 1909, was called to eight-year-old roan gelding in a stable of five or six horses. This horse was run down for about two weeks. Others all looked well.

About a week before front leg swelled from knee to elbow. Moved with pain. Owner used hot applications and treatment that veterinarian had prescribed for swollen hind leg (lymphangitis) about a year previous. As the desired result did not follow again, I was called.

Believing there might have been infection from the rubbing, ordered bichloride wash twice daily. Meanwhile I injected mallein a day or two later, as a small sore was discharging, not typical, but suspicious; the horse was turned into a lot. The resulting œdema was immense, extending into the breast. Horse remained in same spot all day and very dejected. Took no temperatures. Case was reported to the cattle bureau, who sent an agent. Culture was taken and inoculated into guinea pig. Result was negative (probably due to bichloride washing). A second culture was taken and on June 20th I received mallein from the Cattle Bureau to test horse and report. This test was a positive reaction, but rather feeble. All the sores had healed completely, leaving no scars. Enlargement of leg completely gone and horse had gained flesh.

I recommended that as horse could be kept separate from others that owner be allowed to use the same under quarantine conditions.

On the day of this test I received word from the Cattle Bureau that they had just obtained positive results from the last guinea pig inoculation.

The horse was allowed to live, was retested in August, September and October, when it was released from quarantine and still works and is in good condition.

Now this article is not intended to report anything wonderful, but if there is anything in an immunity serum, it would seem that this horse's might be of value for experimenting. The facts of his case are easily verified.

BENEFIT OF POST MORTEM.

By FRANCIS ABELE, Jr., Quincy, Mass.

Was called to a first-class livery stable to see a horse found choked or hung by halter, dead in the stall. Horse was hitched in front at level of nose and also from ceiling to same ring at jaw strap. Feet were comfortably under him, bedding showed no signs of pawing or thrashing, no bruises or abrasions and no signs of dents and scratches on sides of stall. A reliable night man was cleaning harness all night directly behind the horses and heard no disturbance, but when feed man and grooms came in morning horse was discovered dead with head hanging in halter so that union of two ropes supported head at throat. He was supposed to have choked to death. I suspected ruptured vessel or disorder of heart.

Post mortem showed abdominal cavity filled with some sloppy food, serous surfaces inflamed (peritonitis). Smaller colon had a rent five inches long longitudinally, edges badly congested. Removing diaphragm, released several quarts of bloody serum, pleural surfaces inflamed and eroded. Heart was normal and healthy.

Horse belonged to a wholesale fruit dealer. Accident occurred just the day before the 4th of July. I have not questioned the driver, but believe his horse was practically dead when put up.

MILIARY TUBERCULOSIS OF PLACENTA.

By FRANCIS ABELE, Jr., Quincy, Mass.

Was removing placenta from family cow belonging to a wealthy owner and whereas most of placenta came away easily, one part about a foot in diameter was thick (meaty), congested, rough and on removing showed hundreds of miliary tubercles I had a microscopist examine and confirm diagnosis. This cow was tested three years before, had slung calf at six months the year before and for that reason had been refused service to a tested bull, so had gone to a milk man's where cows were not tested. Have seen three or four of such cases, but none that seem to point so directly to their origin.

In sending the foregoing case reports to the REVIEW, Dr. Abele enclosed the photo which we here reproduce, with the following friendly personal note, not intended for publication, but we believe it too interesting to take entirely to ourselves, so share it with our readers:



ABSCESSSES OF THE NECK.

"Here is a photo of a great dane pup and a good one, too, but his present appearance belies the fact. He has one of those abscesses of the neck so common with dogs, but his is of uncommon size, distorting his face and throat. He looks more like a calf.

"Yours truly,

"ABELE."

PROLAPSE OF THE UTERUS WITH COMPLICATION.

By J. ATKINSON WILKINSON, V. M. D., Oxford, Pa.

On Nov. 25 I received a call from a Mr. Kibler, of Elkdale. He said he had a very sick cow and desired me to come down right away.

I went immediately and reached his place at about six o'clock and found the cow to be down with eversion of the womb. Mr. Kibler said she had calved at noon and that when he came out to milk he had found her down and in the condition named, and straining a great deal.

The cow seemed to be in a fairly good condition, although she was unable to rise, which I attributed to weakness from loss of blood and straining so much.

I at once proceeded to replace the uterus by first washing with cold water and wrapping it with a wide bandage. When I started to replace the uterus, she seemed to have a great deal of pain and did not act in the usual manner by straining, but simply bawled, and before I could get it replaced, I noticed she was dying, which she proceeded to do in a very short time.

I was, of course, puzzled, as I had never had a cow act in that manner, and waiting a few minutes I cut through the prolapsed uterus. I found it filled with intestines.

FRACTURE OF THE MANDIBLE.

By R. W. GANNETT, D.V.M., Newark, N. Y.

A five-year-old bay draft mare, weak and emaciated, was presented to me for treatment last winter. She was suffering from a badly infected compound comminuted fracture of the right branch of the mandible in the region of the first and second pre-molars, resulting from a kick received two weeks previously. There was an ugly discharging foul smelling wound on the side of the lower jaw, also much crepitation during attempts at mastication. The first and second pre-molars on the injured side were loose. I gave a doubtful prognosis, but considering the value of the mare advised treatment.

The patient was cast, the wound area scrubbed and disinfected. The wound was enlarged and all pieces of broken bone were removed, thereby exposing a portion of the roots of both the first and second pre-molars. Antiseptic after treatment was provided daily by means of six feet of small rubber tubing attached to a wooden pail filled with 1/1,000 bichloride solution and suspended from the ceiling. The mare was fed molasses and soft food, which it managed to swallow without chewing.

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The discharge ceased at once and healing was so rapid that at the end of six weeks union was complete with a bony enlargement of considerable size at the point of fracture. The lower incisors are about one-half inch to the left, but there is no difficulty in eating.

SOME EXPRESSIONS OF APPRECIATION FROM SUBSCRIBERS.

FT. LEAVENWORTH, KAN., December 4, 1909.

Editors AMERICAN VETERINARY REVIEW:

Enclosed please find cheque for \$3, subscription for 1910. Accept congratulations on continued excellence of REVIEW. I wish for it a prosperous new year.

Yours sincerely,

GERALD E. GRIFFIN,
Veterinarian 3d F. A.

SALEM, OREGON, December 17, 1909.

Editors AMERICAN VETERINARY REVIEW:

Enclosed please find P. O. order for three dollars for one year's subscription to REVIEW. Permit me to say that I have been a subscriber to the REVIEW off and on—mostly on—since its beginning, and these latter years continuously. Many is the time it has come to my assistance when some good doctor has reported on some case that gave me hope and encouragement to put forth new energy and take fresh courage in some of my cases of similar character.

Very sincerely,

D. D. KEELER.

FORT WORTH, TEXAS, December 23, 1909.

THE AMERICAN VETERINARY REVIEW, New York City:

GENTLEMEN—Enclosed please find check for three dollars (\$3.00) for the AMERICAN VETERINARY REVIEW for the following year, one of the best journals in its line published at the present date. Wishing you a successful year, I am,

Yours truly,

R. G. FLOWERS.

CORRESPONDENCE.

Oakland, California, December 13, 1909.

Editors of the AMERICAN VETERINARY REVIEW :

On behalf of the members of the veterinary profession in the west, more particularly those located in the State of California, I desire to impose upon your good offices for the purpose of conveying expressions of the highest appreciation to those who were responsible for the selection of California as the place of meeting of the American Veterinary Medical Association in September, 1910.

Our people in the magnificent west fully realize the great honor that has been conferred upon them, and they are eminently aware of their responsibilities in the premises.

Aside from the pleasures and the geographical and meteorological education which a visit to the Pacific Coast will provide, we consider that from a business standpoint the move is an excellent one. We believe that there is a bounteous harvest to be gleaned in the shape of new members, and we are ready to guarantee that the quantity and quality of the crops will assume goodly proportions. In fact, we believe that when the national organization completes its labors next September it will have increased its membership roll by the addition of the names of from one hundred and fifty to two hundred veterinarians who in every respect will undoubtedly prove to be a most valuable acquisition and asset. This statement may be doubted by some, but when the members of the American Veterinary Medical Association visit this part of the continent we think we can demonstrate to their entire satisfaction that the people of the west usually accomplish what they start out to do.

The California State Veterinary Medical Association and its Southern Auxiliary have already appointed active committees to provide for the physical welfare and pleasures of the veterinarians and their families who come here, and the manner in which assistance financial and otherwise is offered presages a royal, good western time.

The veterinarians of the west realize that this part of the country has a world-wide reputation for doing things, and they are fully aware of the fact that it will be absolutely imperative to make good. It is apparent then that we are not presuming too much when we make the statement that there is not a veterinarian on the Northern Hemisphere who can afford to miss this meeting.

Proffers of assistance are pouring in from veterinary associations and individual veterinarians from one extremity of the Pacific Slope to the other and from the Pacific Ocean to the Rockies. Even the Hawaiian Islands have been heard from.

There is an active committee working on the problem of transportation and it assures us that rates will be obtained so reasonable that it will be almost less expensive to make the trip than to remain at home.

We make an appeal now to every veterinarian in America that he put the sign—

CALIFORNIA, SEPTEMBER 6-7-8-9, 1910.

in a conspicuous place in his office and home as a reminder that these dates have a particular significance and also for the purpose of impressing upon him the necessity of keeping this period of time free for the purpose of giving himself a well-earned treat, mental and physical, and for the liquidation of a debt that he owes to himself, his family and his clientele.

Western people being painfully modest and prone to hide their light under a bushel, it would not be traditional nor seemly for us to boast at this time of what is to be done in the way of entertainment. We will say, however, that if there are any of your readers who have Missourian tendencies and require to be shown, we solicit the privilege of being searched.

This is a golden opportunity, as it means a trip, and everything that goes with it, to the Golden West, the land of sunshine, plenty, more plenty and goodfellowship.

Respectfully,

R. A. ARCHIBALD,
Chairman of the Entertainment Committee.

ABSTRACTS FROM EXCHANGES.

ENGLISH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

AMPUTATION OF THE PENIS AND CASTRATION [*R. Jones, M. R. C. V. S.*].—An old entire horse used for stud purposes, was suffering with inflammation of the left testicle and the penis became swollen, hanging out of the sheath. Urination was likely to be interfered with. Soon the distal third of the penis became raw and covered with ulcerations. Notwithstanding scarifications, laxatives, fomentations and incisions, the swelling remained, and as it was impossible to return the organ into its normal position, amputation and castration were decided upon. The animal was cast and chloroformed. The amputation was performed in leaving two inches of the urethra protruding to be slit and stitched afterwards to the skin. In castrating, the left testicle was found adhering to its envelopes and an elliptic piece of skin had to be left so as to be able to expose the testicle and its cord. The right testicle was also removed without difficulty. Recovery was uneventful, except that a rather serious hemorrhage took place from the right side. It was controlled with cold water. A slight stricture of the urethra took place and demanded two or three small incisions of the cicatrix of the canal and an occasional introduction of a catheter.—(*Veter. News.*)

DERMOID CYST OF THE EYE IN A DOG [*Dr. A. Ross, M. R. C. V. S.*].—Retriever puppy, six months old, is noticed having a thick growth of hairs, apparently springing from the center of the eye ball. It was a small cone-shaped tumor, situated partly on the sclerotic and partly on the cornea and firmly attached to both. A thick tuft of hairs, grows curved inwards from it and interferes with the eye, which is ordinarily kept closed. This growth of hairs is confined to the apex of the tumor. When under anesthesia by morphine and chloroform, the tumor was ex-

cised with little hemorrhage occurring. The base of the tumor looked like dense fibrous tissue. Its exact site was the temporal edge of the corneo-scleral margin and it contained no cystic spaces. The growth of hairs was more luxuriant than is usually the case. The eye was in perfect condition and sight is perfect in both organs.—(*Jour. of Comp. Patho. and Therap.*)

BULLET WOUND OF THE CHEST IN A MULE [*Capt. F. C. O'Rorke, A. V. C.*].—An Indian mule was accidentally shot through the lungs. Seen a few minutes after the accident, she showed very little signs of shock. The bullet has hit the mule on the off side, entering the chest about two inches behind the elbow and one and half below the spur vein. It passed out a little higher up on the near side, making a slightly larger wound. The hemorrhage was not abundant, but when the animal arrived at destination, it was blowing hard and blood-stained serous fluid oozed out during expiration and inspiration. The ribs and sternum were not injured. The treatment was the only one that could be resorted to, as it was during manœuvring that the event took place. The hairs were shaved on the margins of both wounds; the parts were cleaned and dressed with thin layers of boric wool, gummed with boric lint and completely covering the parts. The animal was left in a native hut and not seen for three or four days, when she was found evidently suffering with pleurisy and pneumonia. It was reported that she had refused food for a couple of days, but that now she was beginning to eat. The dressing was taken off. A small abscess on the right side was open and discharged about a teaspoonful of pus. The wounds were dressed again and gradual improvement took place. At first to bring the animal back to the camp, she was carried in a bullock cart in which she was willing to walk herself, until one morning she refused to go in. She was then left to go with the other stock. Within a month she resumed work.—(*Jour. of Comp. Path. and Therap.*)

INTUSSUSCEPTION OF THE SMALL INTESTINE IN A COW [*Prof. J. F. Craig, M. A., M. R. C. V. S.*].—While at pasture this animal was taken with colic. She received Glauber's salt, linseed oil and other compounds, finally was brought to the writer, when she exhibited the following symptoms. She appeared bright enough but grunted when she laid down. There is slight tympanitis; rumination is gone; temperature 102.8° F.; pulse full and

strong, 78; rectal examination revealed nothing definite except that the rectum is empty. The arm withdrawn from it is covered with tarry bad smelling semi-fluid matter. No tenderness on manipulation of the abdominal walls. The treatment consisted of soap rectal injections, and mixture of sodæ hypo-sulph., ammonia carbonas, nux vomica and ginger, three times a day in linseed gruel. Same condition remained; no rumination, no eating, drinking or defecation. The grunting has increased. When the animal lies down, she does it with great care. The tympanic condition increases so that tapping of the rumen is necessary. The introduction of a probang failed to give any relief. Pilocarpine and eserine failed in relieving the condition. The animal vomits freely a greenish yellow semi-fluid matter. She dies. At the autopsy there were found slight peritonitis; a small quantity of fluid in the abdomen. The four stomachs and the first portion of the small intestine contain soft semi-fluid material. Some twenty feet in front of the cæcum there is an intussusception with four feet of intestines involved; it is black and gangrenous. Back of the lesions the bowels were empty. The cow was found to have been in calf with a foetus seven weeks old in the uterus.—(*Veter. Journ.*)

CASE OF DOUBLE SHOULDER-SLIP [*T. F. Prime, M. R. C. V. S.*].—A rather fat fox terrier has been run over by a heavy trade motor. He is unable to stand and is in a state of collapse. He had a small wound on the inside of the right forearm. The mucous membranes are very pale. The wound was dressed and bandaged and a stimulant administered. The dog was put in a quiet kennel. The next day he is brighter, but when induced to stand and walk, it is found that both shoulder blades project fully two inches above the level of the spine, thus letting the body down and giving a very peculiar appearance to the animal. His legs are turned outwards and it was necessary to support his chest with the hand so as to apply a suitable bandage to keep things in place. The bandages were applied tightly and left in place for three weeks when the shoulders had evidently returned into their normal position. However the shoulders have more play on the body than usual and there is a large depression on the seat of the serratus magnus of the right side.—(*Veter. Jour.*)

MALLEIN REACTION IN INDIA [*X. X.*].—Under this title are recorded two cases in which the swelling at the point of injection

was not visible for at least 48 hours after the operation. In a first case, the temperature could not be taken as one of reaction, reaching only 102° after the fifteenth hour, and then going down. Besides that there was no swelling. However after 56 hours had elapsed, the swelling was typical, measuring 7 inches by $3\frac{1}{2}$ at the fifty-eighth hour, 6 by 3 at the eightieth and 6 by 3 at the 104th hour. It then subsided and was gone on the fifty day. In another case, after the forty-eighth hour, being then only two inches by one, but at the sixtieth it measured 7 by $3\frac{1}{2}$, at the eighty-fourth hour 6 by 4, and at the 108th hour 6 by 3. It disappeared on the fifth day. These are the only two peculiar cases that the author has met with in which the swelling was so long delayed, although he had the record of 3,000 tests of mallein.—(*Veter. News.*)

TUMOR OF THE ORBIT IN A CAT [B. H. Mellon, M. R. C. V. S., and G. L. Ingram, M. R. C. V. S.].—Blue Persian cat about two years old, had a swelling beneath the left eye which burst and discharged. It healed up, but then it was noticed that there was a slowly increasing protrusion of the eye. Pus in the antrum was suspected with the possibility entertained of a post-orbital abscess. The hairs over the left cheek were removed and an incision made on the swelling. Small quantity of pus escaped. On exploring the wound a probe was introduced in a tract running downwards and forwards. The cat was placed under general anesthesia and the tooth immediately below the swelling was extracted. A fine grooved pointed probe was then forced into the antrum through the alveolar cavity with hope to establish a drainage. However no pus flowed from this. Evidently the case was a post-orbital abscess, was the conclusion arrived at. With the consent of the owner, the eye ball was extracted, and then a new growth about the size of a hazelnut was observed occupying the bottom and floor of the orbit. It was removed. It was irregular in shape, soft in consistency, of a yellowish red color and somewhat vascular. Unfortunately it was thrown away and laboratory examination could not be made. The orbital cavity was packed with boric wool and a stitch inserted in the lids. The subsequent dressings were made with solutions of aniodol. At first the cat remained very weak and exhausted, refusing food; but after good care and nursing he recovered entirely.—(*Veter. News.*)

FRENCH REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

ACUTE ENCEPHALITIS DUE TO A CHOLESTEATOMA [*MM. Gaccon and Poufferrie*].—Aged 15 years, this horse has remained exposed to hot sun for some long time. Returned to his stable, he suddenly drops paralyzed on the ground. He makes several unsuccessful efforts to get up. He has clonic contractions; the head is constantly turned to the right. The general sensibility is gone. Temperature is 37.7° C.; respiration, 10; pulse hard, 45. There is ptialism, trismus, nystagmus, much marked. Spumous discharge from both nostrils. The treatment consisted in general mustard frictions and strong purgatives. Death took place the next day. The lesions were located in the lateral cerebral ventricles. There is an enormous brownish cholesteatoma, weighing 75 grammes, pressing upon the floor of the ventricle and the thalamus optici, and having given rise to inflammatory process with intraventricular effusion.—(*Rev. Veter.*)

BIG CHOLESTEATOMA OF THE BRAIN [*J. Dignas, Army Veter.*].—This thirteen-year-old horse is doing his work very regularly. He is rather ugly and sometimes kicks. One morning he refuses to walk. The next day he has the appearance of a horse suffering with immobility. The following night he has a bad spell, rears and falls backwards. In the morning carries his head low down, resting it on the walls, remains indifferent to punishment, and moves in a circle to the left. There is complete amaurosis. In the evening he has another attack with his head drawn backwards; he rushes against the walls, strikes violently with his fore feet, grinds his teeth; he is soon covered with perspiration. This spell lasted about 15 minutes. When it is over, the animal is much depressed. These attacks returned every few days. Finally he was left in a comatose condition and died. During his illness the treatment consisted in injections of pilocarpine, blood letting, cold applications on the head, purging, bromide and iodide of potassium. Post mortem: The lesions were only in the brain. The pia-mater was red and œdematous. The blood vessels largely gorged with blood. Each lateral ventricle contained an ovoid tumor, in contact with each other, the septum

lucidum being destroyed. These cholesteatoma weighed 55 grammes the left one, and 35 the right. The entire brain weighed only 635 grammes. It is very strange that these tumors should have existed so long a time without giving rise to any disturbance.—(*Rev. Veter.*)

VESICAL LITHIASIS AND HEMORRHAGIC CYSTITIS IN A CAT [*J. Sellier*].—Nine-year-old cat has refused his food since two days and he seems to be very constipated. He is fat, looks sleepy and depressed. The visible mucous membranes are pale; the abdomen is tympanitic and painful on pressure. Palpation reveals the presence of a hard body in front of the pubis, but the struggling and fighting disposition of the animal prevents its exact location or the determination of its nature. Constipation is suspected and proper treatment prescribed. Rectal injections are given, but are very painful to the animal. They were rejected as quick as they were given. On the third day the animal dies. At the post mortem the hard body felt during life proves to be an enormously distended bladder as big as the fist of a man, from which the urine cannot escape, because of a grey yellowish calculus in the urethra at the ischial arch. The vesical mucous membrane is rough and covered with small elevations red in color and soft to the touch. There were also some fifteen calculi in the bladder. The lesions were those belonging to acute hemorrhagic urethritis and calculous hemorrhagic cystitis.—(*Jour. de Zootech.*)

RUPTURE OF THE INTERNAL BRANCH OF THE SUSPENSORY LIGAMENT WITH OTHER SEVERE LESIONS [*Ch. Monpert, Army Veter.*].—This case occurred in a stallion fifteen years old which had often been laid up for lameness. This time he is on three legs and when he walks he does it with a jump, raising himself on his hind legs and relieving entirely the off fore upon which he does not put any weight. Placed in slings, the off fore leg is left touching the ground with the knee flexed and the fetlock dropping backwards. On a level with the fetlock, there is a great deal of heat and much soreness. There is also swelling alongside the tendons of the flexors muscles. Probable rupture is diagnosed and a blister is applied. No change occurred in the condition of the animal and as he is old and his chances of recovery are doubtful, he is destroyed. At the autopsy, it was found that the capsular ligament of the fetlock joint was ruptured and that the synovia was freely coming out. There was also a complete rup-

ture of the internal branch of the suspensory ligament of the fetlock about two centimeters below the main part of the ligament, a rupture of the intersesamoid ligament, as well as one of the median and internal bands of the middle inferior sesamoid ligament. And to complete it a fracture of the great internal sesamoid bone with the two inferior angles torn as well as the superior angle, which had remained adherent to the ruptured ligament.—(*Rev. Gen. De M. Veter.*)

TREATMENT OF TETANUS BY INTRAVENOUS INJECTIONS OF TALLIANINE; RECOVERY [*Girard and Muller, Army Veter.*].—This is to add to the history of this form of treatment already recommended by a few. A nine-year-old mare performs a very severe work (a long ride of two days' duration), and she returns to her stall without presenting any sign of being tired or overworked. The next day she manifests symptoms which justify a diagnosis of tetanus in the first stage. She is stiff all over, her movements are performed with difficulty, she walks stiff and with pain; the muscles of the neck and rump are hard and contracted, the neck is kept straight, the tail trembling and rather elevated. The masseters are hard, the buccal mucous membrane is dry and hot, the conjunctiva red, pulse hard and small, breathing short and rather accelerated. The mare is placed in a box, well blanketed, given diffusible stimulants, etc. In the evening the symptoms are more marked, the feces are characteristic, nostrils dilated, membrana nictitans covering the eye, etc. It is a marked case, whose initial cause is a large bleeding wart, situated on the internal face of the thigh and which seems to have been the door of entrance of the virus. The treatment consisted of general hygienic measures and the intravenous injection of 20 c. c. of tallianine the first and second day, of 30 on the third and fourth days and finally of 30 more on the sixth day. Hygienic measures completed the treatment and on the eighth day the animal was in full convalescence. Six days after she was cast and operated for the warts that she had on various parts of her body.—(*Bullet. de la Soc. Cent.*)

A CURIOUS FOREIGN BODY IN A DOG [*Mr. Lctard*].—It relates to a three-months'-old puppy which since twenty-four hours shows much distress, has a rather anxious countenance, abundant salivation and frequent efforts at vomition which remain useless. Deglutition is impossible although the evening before he

has taken some milk poured into his mouth with a spoon. External examination of the throat reveals nothing and that of the fauces is also negative, except showing the presence of abundant mucosities and an inflamed mucous membrane. Exploring the œsophageal gutter, a sharp pain is manifested by the dog as the hand passes over the lower third of the neck, and by extending the head backwards on the neck, a small protrusion of the skin is produced and a sharp foreign body is felt under it. The œsophagus is incised and a pointed piece of steel is exposed. Taken hold of with a pair of nippers it is drawn out with a little difficulty. It is the steel rod of a lady's hat pin measuring 25 centimeters in length and as long as the animal or that of the body from the point of the shoulder to that of the ischium. The dog was lost sight of and the result of the operation is not known.—(*Bullet. de la Soc. Cent.*)

BELGIAN REVIEW.

By Prof. A. LIAUTARD, M.D., V.M.

REMARKABLE CASE OF CRYPTORCHIDY IN A HORSE [*Prof. F. Hendrickx*].—Aged two years, this colt has cryptorchidy of the right side and was prepared for operation. The first steps went on as ordinarily, but when the operator felt with his right hand in the abdomen, he found no testicle, no epididymis, no deferens canal nor gubernaculum. However, exploring per rectum, it was revealed that the testicular cord was swollen, being three times its normal size, and after pushing the intestines away, it was possible to bring the testicle close to the inguinal canal. The testicle was found to be as big as a man's head, having a rough surface with bony deposits in its mass and the diagnosis was made of an hypertrophied testicle containing bony structure, probably dental remains. The cord was secured with a strong ligature, but even with this it remained impossible to engage the testicle in the canal, its dimension preventing it. The cord was then cut across after ligation and the testicle allowed to drop free in the abdomen.

Notwithstanding the severity of the operation and the length and duration of the manipulations the colt did well and for about eight months after was able to work. However, he had several slight attacks of colics which were always relieved with due treatment, but finally he had one more severe and died with it. At the autopsy, the abdomen was the object of close examination and an interesting searching of what had become of the testicle. A portion of the duodenum was adherent to the large colon. This adhesion was formed of fibrous tissue which corresponded to a swelling as big as a child's head, a hard, stony, irregular and bosselated mass, which on opening the intestine proved to be protruding in it and showing several dental productions enclosed with a bony envelope. It partly closed the intestinal tract. That was what remained of the testicle. Another time the author says, he will not permit the testicle to float in the abdomen, but resort to laparotomy.—(*Annales de Brux.*)

A WONDERFUL MILCH COW [*Mr. H. R. Bredo*].—A record for an enormously developed udder and an extraordinary daily return of milk from a Belgian cow. The following were the measurements of the udder taken three days after delivery: From the posterior face to the anterior, at the base of the gland, 84 centimeters. The udder protruding back beyond the hocks, and keeping these apart in such a manner that the summit of both joints are 42 centimeters apart from each other. From its starting point of attachment to the abdomen, a little below the region of the patella on one side, to the corresponding point on the other, and passing between the front and back teats, it measures 1 meter 25 centimeters. The anterior teats are 24 centimeters long and the posterior 14. The mammary veins are enormous. The external aspect of this mass is also peculiar. The external face, convex from forward backwards offers a deep depression where the hocks and legs are so to speak incrustated. If looked at from forward backwards, this external face protrudes in the back about 8 centimeters in front. The inferior face reaches about the level of the middle of the canon and the free part of the teats rest on the fetlock. This cow four days after calving gave daily 50 litres of milk and in the year before, six months after she was still giving 40 litres. Showing that her milking qualities remained sensibly the same. The total annual return of this animal has been more than eight thousand litres.—(*Echo. Veter.*)

TWO OBSERVATIONS OF PSYCHICAL MANIFESTATIONS OF TUBERCULOSIS IN A DOG AND A CAT [*Mr. George Hasse*].—These are the records of observations made by the author in two animals affected with tuberculosis as proved by post mortem and which some time before death presented manifestations which recalled similar ones observed in human tuberculosis. For instance in the dog, notwithstanding the severity of his disease and its cachectic condition, as soon as there was a spell of fine weather and sun, it seemed as if the poor dog felt more hope in himself, he looked more gay, more willing to go out; if brought outside to the sun he appeared happier to live, showed less suffering and was willing to eat with more appetite. If, on the contrary, the weather was bad and rainy, the dog remained quiet, dull and depressed and refusing all food. Some days he had very great polydipsy. He was very sensitive to coaxing. He also became very egotistical, growling when others came near the plate where his food was, even if he did not touch it. He also was more affectionate to his master.

In the cat, which had suppurating tuberculous sores on the legs he remained generally gay, its caressing disposition and his intelligence seemed to have increased; he liked company. During the last four months of his life he manifested no pain from the presence of his sores, but had become very capricious. He suffered with severe polydipsy.—(*Bullet. de Med. Vet. Prat.*)

DERMOID CYST AND FIBROCHONDROMA OF THE INTERMAXILLARY SPACE IN A HORSE [*C. Brill*].—Heavy draught colt, 18 months old, has, said the owner, been injured while in the field. He seemed to get well; but while the wound has healed, there remained a swelling which was increasing. Indeed it was a fluctuating tumor as big as a man's fist in the intermaxillary space. The growth was punctured, white yellow liquid flowed out and from the cavity a few hairs were pulled away. Tincture of iodine was applied. After a while the growth returned and total removal was decided. When removed, it was found containing fluid similar to that found at first, and besides, the cavity contained lots of hairs implanted on the inner surface of the cyst. On the anterior part of the cyst there was a cartilaginous prolongation which measured 6 centimeters in length. It was a true fibrochondroma.—(*Bullet. de Med. Vete. Prat.*)

GERMAN REVIEW.

By JOHN P. O'LEARY, V. M. D., Buffalo, N. Y.

THE PRESENT STANDPOINT OF INTRAVENOUS THERAPY [*Dr. Felix Mendel, Essen*].—The author briefly reviewed the history of intravenous therapy in human medicine. He cites the indications and contra-indications, technique and remedial agents. He also summarized in brief the various medicinal agents employed, which are as follows: 1. Hetol (Cinnamic Acid Natron), 1 to 5 per cent. aqueous solution, prescribed in the treatment of tuberculosis (Landerer). This agent is supposed to set up an inflammatory zone, a kind of pneumonic process, a resisting wall of round cells encircling the tubercles, the latter being little inclined to heal by cicatrization. From this results a connective tissue growth throughout the tubercular nodules with subsequent contraction of the same, gradual cicatrization and finally healing. 2. Silver—5 per cent. solution of collargol (argenum colloidal Crède) prescribed in cases of septic infections (sepsis, pyæmia, erysipelas, angina, diphtheria, pneumonia, tubercular fevers, gonorrhœal arthritis and so forth. 3. Arsenic—15 per cent. solution of atoxyl—application (*a*) in the various disturbances of blood formation (chlorosis, anæmia, leukæmia) in nervous diseases of various kinds (neurasthenia, hysteria, neurotic asthma, paralysis, neuritis, chorea), further in morbus Basedow's, skin diseases, glandular enlargements, pseudo-leucæmia; (*b*) in tuberculosis. It is supposed that in this case the vitality of the cells is increased and their resisting powers strengthened against tubercular poisons. Mendel obtained good results with the intravenous arsenical tuberculin treatment. Through this combination, the specific action of the tuberculin is intensified, as a result of the local tuberculin reaction, an inflammatory hyperæmic zone encircles the tubercular nodule, also the accumulation of arsenic in the circulating blood results in an intensified action of the same in the most imperiled cell-territory. (*c*) In protozoon diseases (trypanosomiasis, syphilis, malaria). 4. Natrium Salicylicum.—20 per cent. solution with the addition of coffee according to Mendel is named Attritin. This has been introduced into the trade by the united chemical works at Charlottenburg. Application—In the non-febrile course of

rheumatic diseases (arthritis deformans and arthritis ankylopoietica). 5. Digitalis preparations, (a) Digalen (digitoxin, soluble cloretta). (b) Digitalone prepared according to Mendel from the fresh digitalis leaves (concentrated 1 to 10). It contains all the active glucosides in the leaves (c) Strophanthin Bœhringer recommended by Fränkel. (d) Adrenalin sodium chloride infusion: one litre of a physiological salt solution and 8 drops of a 1/1,000 adrenalin solution. This is recommended by Heidenhein in peritonitis where other cardiac agents fail or have only a transitory effect, or when the blood pressure is lowered and the heart becomes paralyzed due to absorption of septic matter. Application in circulatory disturbances. 6. Various remedies. (a) Quinine in syphilis. (b) Potassium iodide 5 per cent. in syphilis. (c) Sodium iodide 20 per cent. in parenchymatous goitre, in special forms of Basedow's disease and arteriosclerosis. (d) Formalin solution 1/5,000, in septicæmia. (e) Chloride of sodium solution 10 per cent. in hæmoptoe. (f) Fibrolysin 10 per cent. recommended for its emollient action on cicatricial tissue.—(*Berliner Klinische Wochenschrift*.)

EXPERIMENTAL AND HISTOLOGICAL OBSERVATIONS CONCERNING THE MILK AND THE AMNIOTIC FLUIDS OF SHEEP DEAD OF RABIES [*Dr. R. Rcpetto, Sassari*].—A rabid dog attacked a band of sheep. Fourteen of the animals died of rabies. On those sheep which were pregnant, the author conducted the following post-mortem examinations: 1. Searching for the Negri bodies in the ammonshorn of the sheep. 2. Searching for the Negri bodies in the ammonshorn of the foetus. 3. Searching for the rabies virus in the milk expressed from the udder of the sheep. 4. Searching for the rabies virus in the amniotic fluids. In the ammonshorn of the sheep Negri bodies were present, but were absent in the case of the foetus. Besides, rats which were inoculated with the latter material were unaffected. Further rabies could not be produced through inoculations with the milk of the sheep nor with the amniotic fluids. From this the author concludes: 1. That the virus of rabies is not transmitted by the mother to the foetus, as Pasteur, Celli, L. de Blasi and Zagari had already proven, whilst Perroncito, Carita Loir maintained the opposite view. 2. That the Negri bodies do not filter through the placenta and consequently are not to be found in the foetus. 3. That the amniotic fluid does not contain the virus of rabies. 4. That the milk does not contain the virus of rabies, as Pasteur,

Celli, L. de Blasi and Zagari had already proven.—(*Centralblatt für Bact.* 1, *Abt. originale* Bd. 50, *Heft* 4, *page* 442.)

CONCERNING THE OCCURRENCE OF THE *BACILLUS PYOGENES* AS SPUTUM BACTERIA AND PUS PRODUCERS IN THE VARIOUS SPECIES OF ANIMALS [Prof. Dr. Olt, Gieszen].—Prof. Olt had undertaken numerous investigations concerning the occurrence of the *b. pyogenes* as sputum bacteria and as pus producers in the various species of animals. The results of his interesting experiments are as follows: 1. The *bacillus pyogenes* is pathogenic for cattle, sheep, goats, deer, swine and wild hogs; it vegetates in the oral cavity of these animals as sputum bacteria. Enormous quantities of these organisms accumulate in the tonsils of swine. 2. When colonized in the vicinity of wounds, the bacilli develop pyogenic properties; they gain the lymph and blood vessels and finally produce pyæmia. 3. Wounds in the cavity of the mouth and injuries resulting through bites especially in the case of swine, are easily infected and are prone to abscess formation in the immediate neighborhood. 4. Swallowing the *bacillus pyogenes* with the saliva or with food in the process of mastication, drenching, or the contents of perforated abscesses of the mouth produce purulent or muco-purulent bronchitis, purulent bronchopneumonia or as a result of the presence of other species of bacteria, particularly putrefactive fungi result in gangrenous pneumonia. 5. It has been ascertained that the *bacillus pyogenes* is the cause of mammary inflammations in swine (Olt), cattle (Glage), goats (Damann, Freese, Olt), and sheep (Olt).—(*Deutsche Tierärztliche Wochen.*, 1908, No. 43 and 44.)

PEMPHIGUS IN A DOG [Emil Hauptmann, Warnsdorf in Böhmen].—Hauptmann reports the case of a hunting dog affected with an extremely chronic form of pemphigus with thickening of the skin, crusts and papillæ-like growths; at intervals vesicles and moist patches appeared on the diseased surface. Hauptmann applied septoform in combination with castor oil and obtained excellent results in this case. The proportion in which the ingredients were used was not reported. The intense itchiness disappeared almost immediately, and the hair resumed its normal color and thickness again. While it is true the cure was not as rapid as Dasch reports in the *Tierärztliche Zentralblatt*, 1908, No. 17, after the application of styrax.—(*Tierärztliche Zentralblatt*, 1908, No. 23.)

ANCHYLOSTOMIASIS IN A DOG COMPLICATED WITH RABIES-LIKE SYMPTOMS [*Mello*].—Mello observed in a dog affected with anchylostomiasis, paralysis of the left fore leg, howling, biting at the chain and at the straw. The gait was unsteady, swaying, the animal frequently falling down. Appetite completely dissappeared, the above symptoms became more aggravated and the dog died on the eighth day. The most careful examination and inoculation gave no indication of the existence of rabies. On the contrary masses of anchylostomæ (*uncinaria trigonocéphala*) were found in the small intestines. The latter must be viewed as the cause of death and the excitors of the rabies-like symptoms observed.—(*Deutsche Tierärztliche Wochenschrift*, No. 22, 1909.)

B. A. I. VETERINARY INSPECTORS' ASSOCIATION
OF CHICAGO.

The regular monthly meeting was called to order by Dr. G. D. Young, vice-president, on December 10, at 8 p. m.

The resignation of Dr. E. W. Barthold, owing to his transfer to East St. Louis, was accepted. A vote of thanks was extended to the doctor for his painstaking work in connection with the association.

Dr. S. E. Bennett was unanimously elected as president for the unexpired term.

An excellent paper on "Tumors" was read by Dr. E. R. Le Count. Drs. Day, Paxson and Holcombe participated in the discussion.

D. D. TIERNEY,
Secretary-Treasurer.

GETTYSBURG, PA., December 21, 1909. AMERICAN VETERINARY REVIEW Editors, Dear Friends—Enclosed please find check for \$3.00, my renewal for 1910 subscription:

You are always welcome to my three
Dollars, towards your Christmas tree;

I am always ready to renew

My subscription for the REVIEW.

To me you are a good old friend;

A monthly visitor, whom I contend,

Is worth a thousand times more than the money spend.

With the greetings of the season, I remain, cordially yours,

E. D. HUDSON.

NEWS AND ITEMS.

D. J. HERRING, B.S., D.V.S., of Raleigh, N. C., has accepted a position on the experiment station force of Georgia, stationed at Experiment, Ga.

VETERINARIAN WALTER R. PICK, First Cavalry, U. S. A., will leave Camp Stotsenburg, January 15, for the States, to take station at Des Moines, Ia.

THE annual meeting of Veterinary Medical Association of New Jersey will be held at the Columbian Club, Bright street and Jersey avenue, Jersey City, January 13, 1910. The meeting will convene at 10 a. m.

THE students of the New York State Veterinary College had the good fortune on December 15 last of listening to an address on the responsibility of the veterinarian to the dairyman, by Ex-Governor Hoard, of Wisconsin. Ex-Governor Hoard is an honorary member of the A. V. M. A., and known to the veterinarians throughout the entire country.

KNEW HIS ZOOLOGY.—“Little boy,” asks the well-meaning reformer, “is that your mamma over yonder with the beautiful set of furs?”

“Yes, sir,” answers the bright lad.

“Well, do you know what poor animal it is that has had to suffer in order that your mamma might have the furs with which she adorns herself so proudly?”

“Yes, sir. My papa.”—(*The American Bottler.*)

THE first meeting of the International Commission for the Control of Bovine Tuberculosis was held in Buffalo, December 13 and 14 last. Dr. J. G. Rutherford states that in his opinion it was a most successful beginning of the work of the commission. Every member was present with the exception of Mr. Tomlinson, of Denver, who was recently appointed by President Melvin in the place of Mr. Louis Swift, of Chicago, one of the original appointees, who declined to act. Dr. M. H. Reynolds

was appointed secretary, and will furnish a report of the proceedings of the meeting, no doubt, in time for our February issue.

DR. A. B. ELLIS, Los Angeles, California, who is a member of the Los Angeles Rogero Club, and veterinarian to the same, is an enthusiast at the "Push Ball" game. This game is played in the saddle, and, the Doctor tells us, has been greatly modified for the better in the past season, and that his club does not allow its members to wear spurs or use Spanish bits on their horses when playing in the game. Dr. Ellis favored us with a picture of the game being played, and also a splendid picture of himself and his handsome horse, which lack of space prevents us from reproducing.

TWELVE or thirteen cows in a herd were grazing in a large field opposite a dwelling house. One day a German band began playing on the road dividing the house from the field.

No sooner did the cows hear the music than they came from the further end of the field and standing with their heads over the dividing stone fence quietly listened to the music.

On the departure of the musicians the cows followed them as far as they could on the other side of the wall. When they could go no further they stood looking piteously. Some of them became so excited that they ran 'round and 'round the field, seeking to get out. Finding no outlet, they returned to the corner where they lost sight of the band and remained there for a long time.—(*American Naturalist*.)

THE ANNALS OF SURGERY COMPLETES ITS FIFTIETH VOLUME.—The December number of the *Annals of Surgery* (Philadelphia), which completes the fiftieth volume of that journal, is worthy of more than passing notice. It is a jubilee number, and, by its size and the character of its contents, fitly marks so important an event in its history. The cosmopolitan character of the journal is seen from the list of contributors, which comprises the leaders in surgery of England, Scotland, Denmark, France, Italy, Hawaii, Canada, and the United States.

Twenty-two articles form a number of more than four hundred pages. The illustrations, some of which are colored, are profuse, making a volume which merits the term of a jubilee number. Such an event in the history of any medical journal is worthy of note.

THE MISSOURI VALLEY VETERINARY ASSOCIATION.—The semi-annual meeting of the Missouri Valley Veterinary Association will be held in Kansas City, Mo., February 2 and 3, 1910.

It is anticipated that this meeting will be a large one. The officers of the association and local committee are sparing no efforts to prepare an excellent program, which has marked the success of the association the past few years. The forenoon and afternoon of the first day will be devoted to the presentation of papers and the discussion of same. A banquet will be given in the evening, for which time a symposium on meat inspection is being prepared. The forenoon of the second day will be devoted to the presentation and discussion of papers and the afternoon to a clinic. The local committee have promised an abundance of clinical material.

Every veterinarian living in the middle west should plan to attend this meeting.

VETERINARY CONFERENCE AT ITHACA.—Those who were so fortunate as to be able to attend the conference of veterinarians of New York State, held at Ithaca one year ago, will be glad to know that the second annual conference will be held at the New York State Veterinary College, Ithaca, on January 11. The following program bespeaks the educational treat that is in store for those who attend this year.

Tuesday, January 11—10 a. m.: The acid-fast bacteria in their relation to disease with special reference to Johne's disease and tuberculosis; V. A. Moore. 11 a. m.: State stallion legislation; Carl W. Gay, Veterinary Department, University of Pennsylvania. 12 m.: Colic and its treatment; D. H. Udall. 2 p. m.: Surgical clinic; W. L. Williams. 4 p. m.: Discussion and demonstration—Operation for roaring; opened by Dr. Berns, W. L. Williams presiding. 8 p. m.: Address of welcome; President Schurman. The responsibility of the veterinarians in the control of bovine tuberculosis. W. H. Jordan, Director of Geneva Experiment Station. Smoker.

Wednesday, January 12—9 a. m.: The identification of cattle by branding and otherwise; P. A. Fish. 10 a. m.: Agricultural law of interest to veterinarians with special reference to glanders and tuberculosis; J. F. DeVine, Chief Veterinarian, State Department of Agriculture. 11 a. m.: Granular venereal disease of cattle; W. L. Williams. Discussion. 2 p. m.: Clinic for small animals; H. J. Milks. Clinic for large animals with physical di-

agnosis; D. H. Udall. 4 p. m.: Discussion and demonstration—Ventilation; C. D. Morris, R. C. Reed, W. L. Baker, R. N. G. Darby; Dr. Udall presiding.

A further feature of this conference will be the fact that in each laboratory any demonstration of methods, etc., desired by visiting veterinarians will be gladly made.

WESTERN CANADA NOTES.—The veterinary association of Saskatchewan was fortunate recently in getting the legislature of that province to recognize the principle of having the profession represented on Boards of Health. This session bill No. 18, "an act regarding the public health," was introduced. In it certain clauses gave power to deal with municipal meat and milk inspection and other veterinary matters; to administer the said act a council office was to be appointed by the government, and the act stated the quintette was to be composed of a commissioner and four medical men. The omission to place a veterinarian on this council was brought to the attention of the veterinary association by Dr. A. G. Hopkins. Action was at once taken and a committee appointed consisting of Drs. Armstrong, Tyfe and Hopkins to press the matter of veterinary representation on the Public Health Council. Two broad-minded farmer members of the legislature, Messrs. Langley and Pierce, championed the cause of the veterinary profession, a cause which developed unexpected strength and support when presented as a matter of principle and fairness to the other legislators. The broad-mindedness of Premier Scott accounted for the amendment being allowed by which the profession is recognized; this despite the opposition of some medical men who happen to be members of the legislature, and the indirect opposition of the Commissioner of Agriculture, who, unfortunately, is prejudiced against the profession of veterinary medicine.

Now Alberta and Manitoba, it is up to you to secure similar representation for our honorable profession on your provincial boards of health.

Dr. Fred. Torrance, of Winnipeg, attended the first meeting of the Tuberculosis Commission recently held at Buffalo, N. Y.

We believe it is the intention of some of the western provinces to amend their enrollment acts and in future substitute examination of stallions for hereditary unsoundness before granting the enrollment certificate. Previously an enrollment certificate, stating also the stallion was sound, was granted on a dec-

laration made before a J. P. or notary being received from the owner to the effect that he believed the animal to be sound. The various provincial veterinary associations will need to be on the qui vive to prevent any unqualified person being allowed to inspect and issue certificates of soundness to stallion owners.

ANNUAL SMOKER OF THE VETERINARY MEDICAL ASSOCIATION OF NEW YORK CITY.—On Wednesday evening, December 1, 1909, the Veterinary Medical Association of New York City held its second annual smoker at Reisenweber's. On this occasion it was held in connection with the annual meeting of the association, and followed the regular routine of business and election of officers; a literary program having been omitted so as to give the entire evening to social entertainment. It proved a great success and has resolved itself into an annual event that veterinarians of New York City and vicinity look forward to with pleasurable anticipation. One good fellow who appreciates the pleasures and necessity of the social side of life (even with veterinarians) asked at the closing, "when are we to have the next one?" Indeed, the interest has spread far beyond New York City and vicinity, as, among the seventy-eight in attendance were men from distant cities both in and out of the state. Prominently among those from without the state was Dr. W. Horace Hoskins, of Philadelphia, Pa. Among those from a distance within the state were two veterinarians holding the two highest respective positions that the state has to offer to veterinarians, viz.: Dr. Walter G. Hollingworth, President of the New York State Veterinary Medical Society, from Utica (which city is in the exact centre of New York State), and Dr. John F. De Vine, Chief Veterinarian to the Department of Agriculture, from Albany. New Jersey was also represented by some of its most prominent members of the veterinary profession, among others Drs. Robert Dixon, of Sea Bright; J. Payne Lowe, of Passaic, and Thomas E. Smith, of Jersey City. The election of officers resulted in the election of Dr. E. B. Ackerman, of Brooklyn, as president; Dr. R. S. McKellar as vice-president, and the re-election of Dr. W. Reid Blair as secretary-treasurer. This will make Dr. Blair's fourth term as secretary-treasurer, with three presidents, he having served with the late Dr. Bell during his last term as president, with Dr. Grenside during two terms, and he will serve with President-elect Ackerman.

The retiring president, Dr. Grenside, acted as master of ceremonies and covered himself with glory by the masterly and entertaining manner in which he introduced the visitors and members whom he called upon to address a few remarks to the assemblage. Dr. Hoskins spoke of the desirability of a uniform standard and uniform degree in veterinary medicine, and offered as a solution of the problem an examination by the federal government which would entitle veterinarians passing it the right to practice in any state. He suggested that examination replace the several civil service examinations now required for veterinary positions in the federal government.

Judge Alfred E. Ommen (who is counsel for the city association) questioned the legality of the plan proposed by Dr. Hoskins. President Hollingworth of the state society spoke enthusiastically of the work to be accomplished during the current year, and, had he been called upon earlier, would have given a résumé of his plans, but was compelled to desist in order to catch a midnight train.

Chief Veterinarian De Vine spoke of the work being done by the Department of Agriculture and generously offered any veterinarians present who were desirous of hearing anything in regard to the practical working of the glanders law, the privilege of asking him questions. This privilege was taken advantage of, and the doctor was able in this way to be of infinite benefit to the city practitioners.

Dr. "Tom" Smith, in his usual genial, gracious manner expressed his appreciation of the privilege of being present and having an opportunity of speaking to his many friends in New York City, and his intention of continuing to come to their gatherings, and then reverted to a subject very near to his heart, and one on which he never fails to speak in an assemblage of veterinarians, the Veterinary Medical Association of New Jersey. He reminded his Gotham friends that said association will meet in Jersey City (his home) on January 13, 1910, and gave a general invitation for everyone to be present, and there is no doubt but what a large percentage *will* attend the New Jersey meeting, which this year convenes so close to New York City. Chairman Mangan of the committee appointed by President Grenside to arrange for the smoker, deserves much credit for the pleasant evening afforded everyone present as a result of the excellent arrangements that he had perfected.

VETERINARY MEDICAL ASSOCIATION MEETINGS.

In the accompanying table the data given is reported by many Secretaries as being of great value to their Associations, and it is to be regretted that some neglect to inform us of the dates and places of their meetings.

Secretaries are earnestly requested to see that their organizations are properly included in the following list:

Name of Organization.	Date of Next Meeting.	Place of Meeting.	Name and Address Secretary.
Alumni Ass'n, N. Y.-A. V. C.....	.....	141 W. 54th St.	L. L. Glynn, N. Y. City.
American V. M. Ass'n.....	.....	Chicago.....	R. P. Lyman, Kansas City, Mo.
Arkansas Veterinary Ass'n.....	.....	.....	Horace E. Rice, Little Rock.
Ass'n Médécalle Veterinaire Fran- caise "Laval".....	1st and 3d Thur. of each month	Lec. Room, La- val Un'y, Mon.	J. P. A. Houde, Montreal.
B. A. I. Vet. In. A., Chicago.....	2d Fri. ea. mo...	Chicago.....	D. D. Tierney, Chicago, Ill.
California State V. M. Ass'n.....	.....	San Francisco.	J. J. Hogarty, Oakland.
Central Canada V. Ass'n.....	.....	Ottawa.....	A. E. James, Ottawa.
Chicago Veterinary Society.....	2d Tues. ea. mo.	Chicago.....	J. M. Parks, Chicago.
Colorado State V. M. Ass'n.....	.....	Denver.....	M. J. Woodliffe, Denver.
Connecticut V. M. Ass'n.....	February 1, 1910.	Hartford.....	B. K. Dow, Willimantic.
Genesee Valley V. M. Ass'n.....	2d wk. in Jan., '10.	Rochester.....	J. H. Taylor, Henrietta.
Georgia State V. M. A.....	.....	.....	P. F. Bahnsen, Americus.
Hamilton Co. (Ohio) V. A.....	.....	.....	Louis P. Cook, Cincinnati.
Illinois State V. M. Ass'n.....	Dec. 1-2, 1909...	Chicago.....	J. H. Crawford, Harvard.
Illinois V. M. and Surg. A.....	Jan. and Aug.	Louisville.....	W. A. Swain, Mt. Pulaski.
Indiana Veterinary Association...	January, 1910	Indianapolis...	E. M. Bronson, Indianapolis
Iowa Veterinary Ass'n.....	Feb. 15, 16, 17, 1910	Des Moines...	H. C. Simpson, Denison.
Kansas State V. M. Ass'n.....	Jan. 4-5, 1910...	Manhattan...	B. Rogers, Manhattan.
Kentucky V. M. Ass'n.....	.....	Not decided	D. A. Piatt, Lexington.
Keystone V. M. Ass'n.....	Monthly.....	Philadelphia...	S. Lockett, Glenolden.
Louisiana State V. M. Ass'n.....	.....	.....	E. P. Flower, Baton Rouge.
Maine Vet. Med. Ass'n.....	January, 1910.	Augusta.....	A. Joly, Waterville.
Maryland State Vet. Society.....	.....	Baltimore.....	H. H. Counselman, Sec'y.
Massachusetts Vet. Ass'n.....	Monthly.....	Boston.....	Wm. T. White, Newtonville.
Michigan State V. M. Ass'n.....	Jan. 25-26, 1910.	Saginaw.....	Judson Black, Richmond.
Minnesota State V. M. Ass'n.....	Jan. 12-13, 1910.	St. Paul.....	G. Ed. Leech, Winona.
Mississippi State V. M. Ass'n.....	.....	.....	J. C. Robert, Agricultural Col.
Missouri Valley V. Ass'n.....	Feb. 2-3, 1910...	Kansas City...	B. F. Kaupp, Fort Collins, Colo.
Missouri Vet. Med. Ass'n.....	.....	St. Joseph...	F. F. Brown, Kansas City.
Montana State V. M. A.....	.....	Helena.....	W. S. Swank, Miles City.
Nebraska V. M. Ass'n.....	.....	Grand Island.	H. Jensen, Weeping Water.
New York S. V. M. Soc'y.....	.....	Ithaca.....	J. F. De Vine, Goshen.
North Carolina V. M. Ass'n.....	.....	Wilmington..	Adam Fisher, Charlotte.
North Dakota V. M. Ass'n.....	Call of Sec'y....	Fargo.....	C. H. Martin, Valley City.
Ohio State V. M. Ass'n.....	Jan. 18-19, 1910.	Columbus...	Sidney D. Myers, Wilmington
Ohio Soc. of Comparative Med..	Annually.....	Up'r Sandusky	F. F. Sheets, Van Wert, Ohio.
Oklahoma V. M. Ass'n.....	.....	.....	R. A. Phillips, Oklahoma City
Ontario Vet. Ass'n.....	.....	.....	C. H. Sweetapple, Toronto.
Passaic Co. V. M. Ass'n.....	Call of Chair...	Paterson, N. J.	H. K. Berry, Paterson, N. J.
Pennsylvania State V. M. A.....	Mar. 8-9, 1910...	Philadelphia..	F. H. Schneider, Philadelphia.
Philippine V. M. A.....	.....	.....	Chas. G. Thomson, Manila.
Province of Quebec V. M. A.....	.....	Mon. and Que.	Gustave Boyer, Rigaud, P. Q.
Rhode Island V. M. Ass'n.....	Jan. and June...	Providence...	J. S. Pollard, Providence
St. Louis Soc. of Vet. Inspectors.	1st Wed. fol. the 2d Sun. ea. mo.	St. Louis.....	Wm. T. Conway, St. Louis, Mo
Schuylkill Valley V. M. A.....	Dec. 15, 1909...	Reading.....	W. G. Huyett, Wernersville.
Soc. Vet. Alumni Univ. Penn....	.....	Philadelphia..	B. T. Woodward, Wash'n, D. C.
South Dakota V. M. A.....	July, 1910.....	Sioux Falls...	J. A. Graham, Sioux Falls.
Southern Auxiliary of California State V. M. Ass'n.....	Jan. Apl. Jy. Oct.	Los Angeles...	J. A. Edmonds, Los Angeles.
So. St. Joseph Ass'n of Vet. Insp..	4th Tues. ea. mo.	407 Ill. Ave...	H. R. Collins, So. St. Joseph.
Tennessee Vet. Med. Ass'n.....	.....	.....	A. C. Topmiller, Murfreesboro
Texas V. M. Ass'n.....	Call Exec. Com.	.....	R. P. Marsteller, College Sta.
Twin City V. M. Ass'n.....	2d Thu. ea. mo.	St. P.-Minneap	S. H. Ward, St. Paul, Minn.
Vermont Vet. Med. Ass'n.....	Jan. 19th, 1910..	White Riv. Jc.	F. W. Chamberlain, Burlington
Veterinary Ass'n of Alberta.....	.....	.....	C. H. H. Sweetapple, For.
Vet. Ass'n Dist. of Columbia.....	3d Wed. ea. mo..	514-9th St., N. W.....	Saskatchewan, Alta., Can.
Vet. Ass'n of Manitoba.....	Not stated.....	Winnipeg.....	M. Page Smith, Wash., D. C.
Vet. Med. Ass'n of N. J.....	Jan. 13, 1910	Jersey City...	F. Torrance, Winnipeg.
V. M. Ass'n, New York City.....	1st Wed. ea. mo.	141 W. 54th St.	W. Herbert Lowe, Paterson.
Veterinary Practitioners' Club...	Monthly.....	Jersey City...	W. Reid Blair, N. Y. City.
Virginia State V. M. Ass'n.....	Jan. 13-14, 1910.	Richmond...	A. F. Mount, Jersey City.
Washington State Col. V. M. A..	1st & 3d Fri. Eve.	Pullman.....	W. G. Chrisman, Charlo'sv'le.
Washington State V. M. A.....	.....	Seattle.....	R. G. McAlister, Pullman.
Western Penn. V. M. Ass'n.....	1st Wed. ea. mo.	Pittsburgh...	J. T. Seely, Seattle.
Wisconsin Soc. Vet. Grad.....	.....	Grand Rapids.	F. Weitzell, Allegheny.
York Co. (Pa.) V. M. A.....	Dec. 7, 1909...	York, Pa.....	J. P. West, Madison.
			E. S. Bausticker, York, Pa.

PUBLISHERS' DEPARTMENT.

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Rejected manuscripts will not be returned unless postage is forwarded.

Subscribers are earnestly requested to notify the Business Manager immediately upon changing their address. Make all checks or P. O. orders payable to American Veterinary Review.

A CHRISTMAS GIFT.—Dr. Francis Abele, Jr., of No. 18 Spear street, Quincy, Mass., wrote us under date of December 3d, that he had complete loose volumes of the AMERICAN VETERINARY REVIEW for a number of years back, that he would be pleased to contribute to any school or society who could make use of them. He concludes his letter by saying that he would be pleased to make a Christmas present; that he did "not wish to sell them." At the time Dr. Abele wrote, the December number was out, so the announcement of a Christmas present comes rather late from us; but no doubt the doctor will be glad to hear from any deserving source where the volumes would be useful in the dissemination of knowledge.

A CHANGE IN THE AD, BUT NOT IN THE PRODUCT.—THE Od Chemical Company, who make SANMETTO, have made a change in the form of their advertisement on page 8 (Adv. Dept.), replacing the old cut by a very pretty and suggestive one. The product advertised never changes; it is staple.

THE WEST DISINFECTING COMPANY, who have advocated the standardizing of disinfectants for a long time, have some splendid disinfectants which they will be pleased to demonstrate the efficiency of if REVIEW readers will drop them a line. Their advertisement appears constantly on the lower half of the inside back cover page.